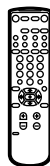
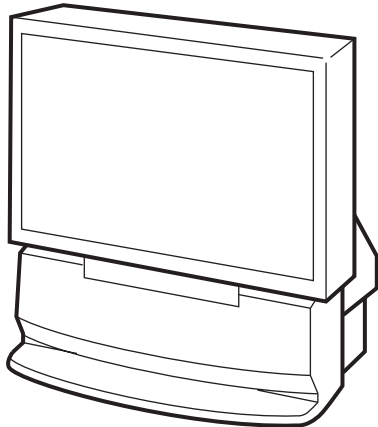


# SERVICE MANUAL RA-2A CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
KP-48S65R	RM-Y136A	US	SCC-N65J-A				



RM-Y136A



KP-48S65R



\* Please file according to model size. ....

## SPECIFICATIONS

<b>Projection system</b>	3 picture tubes, 3 lenses, horizontal in-line system
<b>Picture tube</b>	7 inch high-brightness monochrome tubes (6.3 raster size), with optical coupling and liquid cooling system
<b>Projection lenses</b>	High performance, large-diameter hybrid lens F1.1
<b>Screen size</b>	48 inches (measured diagonally)

<b>Television system</b>	American TV standards
<b>Channel coverage</b>	VHF: 2 – 13 / UHF: 14 – 69 / CATV: 1 – 125
<b>Antenna</b>	75 ohm external antenna terminal for VHF/UHF
<b>Inputs/output</b>	<p>VIDEO IN 1</p> <p>VIDEO IN 2 (VIDEO 2 INPUT)</p> <p>S VIDEO (4-pin mini DIN):</p> <p>Y: 1 Vp-p, 75-ohms unbalanced, sync negative</p> <p>C: 0.286 Vp-p (Burst signal) 75 ohms</p> <p>VIDEO (phono jack): 1 Vp-p, 75-ohms unbalanced, sync negative</p> <p>AUDIO (phono jacks): 500 mVrms (100% modulation) Impedance : 47 kilohms</p> <p>VIDEO IN 3</p> <p>VIDEO (phono jacks): 1 Vp-p, 75-ohms unbalanced, sync negative</p> <p>AUDIO (phono jacks): 500 mVrms (100% modulation) Impedance: 47 kilohms</p> <p>MONITOR OUT</p> <p>VIDEO (phono jack): 1 Vp-p, 75-ohms unbalanced, sync negative</p> <p>AUDIO (phono jacks): 500 mVrms (100% modulation), Impedance: 10 kilohms</p> <p>AUDIO OUT (phono jacks): 900 mVrms (100% modulation) Impedance: 5 kilohms</p>

<b>Speaker</b>	Full range speaker 100 mm (3.9 inches) diameter
<b>Speaker output</b>	15 W x 2
<b>Power requirement</b>	120 V AC, 60 Hz
<b>Power consumption</b>	165 W
	Standby mode: 3 W
<b>Dimensions</b>	1,106 x 1,337 x 571 mm (W/H/D) (43 <sup>5</sup> / <sub>8</sub> x 52 <sup>5</sup> / <sub>8</sub> x 22 <sup>1</sup> / <sub>2</sub> inches)
<b>Mass</b>	67 kg (147 lbs 11 oz)
<b>Supplied accessories</b>	Remote control RM-Y136A (1) Size AA (R6) battery (2)
<b>Optional accessories</b>	U/V mixer EAC-66 Connecting cables RK-74A, RK-G34, VMC-810S/820S, YC-15V/30V High-contrast protective screen SCN-48X2

Design and specifications are subject to change without notice.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna’s replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

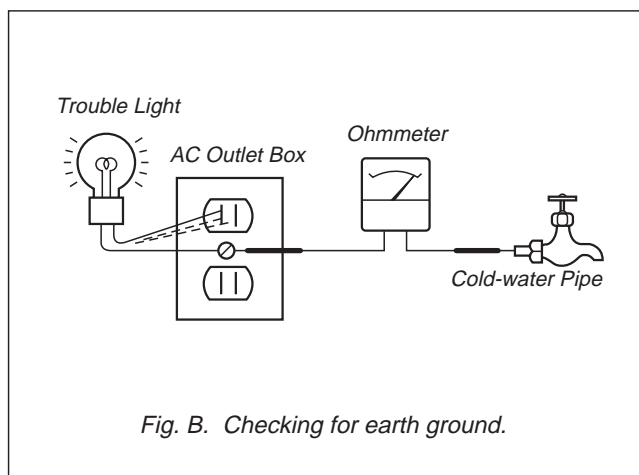
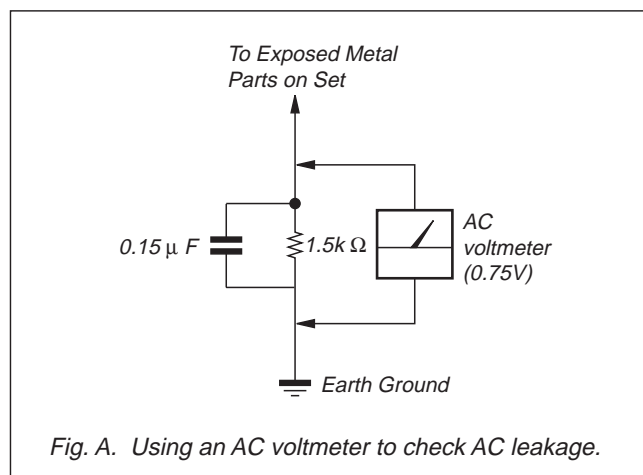
## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

## HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)



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### (CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

### WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

## SECTION 1 GENERAL

The operating instructions mentioned here partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in the manual.(part.no : 3-862-541-41)

### Welcome!

Thank you for purchasing the Sony Color Rear Video Projection TV. Here are some of the features you will enjoy with your projection TV:

- On-screen menus that let you set the picture quality, sound, and other settings.
- Two tuner Picture-in-Picture (PIP) that allows you to watch another TV channel, video or cable image as a window picture.
- Surround system that simulates the sound quality of a concert hall or movie theater.
- SAVA SPEAKER option of the AUDIO menu that lets you take advantage of the Sony SAVA series speaker system's surround sound and super woofer mode when you connect it to the projection TV.

#### About this manual

Instructions in this manual are based on use of the remote control. You can also use the controls on the projection TV if they have the same name as those on the remote control.

### Precautions

This projection TV operates on extremely high voltage. To prevent fire or electric shock, please follow the precautions below.

#### Safety

- Operate the projection TV only on 120 V AC.
- One blade of the plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Should any liquid or solid object fall into the cabinet, unplug the projection TV and have it checked by qualified personnel before operating it further.
- Unplug the projection TV from the wall outlet if you are not going to use it for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

For details concerning safety precautions, see the supplied leaflet "IMPORTANT SAFEGUARDS."

#### Note on cleaning

Clean the cabinet of the projection TV with a dry soft cloth. To remove dust from the screen, wipe it gently with a soft cloth using vertical strokes only. Stubborn stains may be removed with a cloth slightly dampened with solution of mild soap and warm water. Never use strong solvents such as thinner or benzine for cleaning. If the picture becomes dark after using the projection TV for a long period of time, it may be necessary to clean the inside of the projection TV. Consult qualified service personnel.

#### Installing

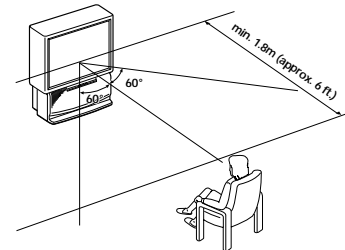
- To prevent internal heat build-up, do not block the ventilation openings.
- Do not install the projection TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.
- Avoid operating the projection TV at temperatures below 5°C (41°F).
- If the projection TV is transported directly from a cold to a warm location, or if the room temperature has changed suddenly, the picture may be blurred or show poor color. This is because moisture has condensed on the mirror or lenses inside. If this happens, let the moisture evaporate before using the projection TV.
- To obtain the best picture, do not expose the screen to direct illumination or direct sunlight. It is recommended to use spot lighting directed down from the ceiling or to cover the windows that face the screen with opaque drapery. It is desirable to install the projection TV in a room where the floor and walls are not of reflecting material. If necessary, cover them with dark carpeting or wall paper.

### Getting Started

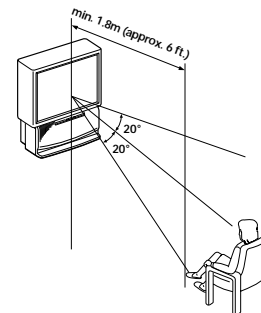
## Step 1: Installing the projection TV

For the best picture quality, install the projection TV within the areas shown below.

#### Optimum viewing area (Horizontal)

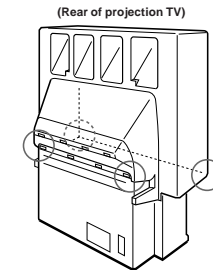


#### Optimum viewing area (Vertical)



### Carrying your projection TV

Be sure to grasp the areas indicated when carrying the projection TV, and to use more than two people.



### Preparing for your projection TV

Before you use your projection TV, adjust convergence. For the procedure, see "Step 4: Setting up the projection TV automatically (AUTO SET UP)" on page 14.

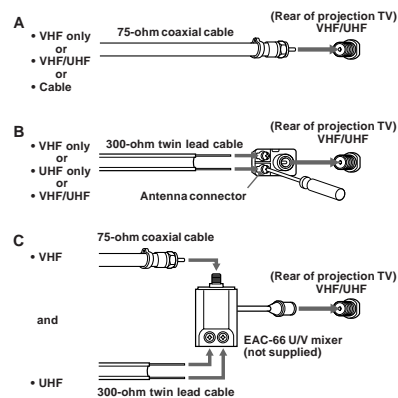
EN

## Step 2: Hookup

Although you can use either an indoor or outdoor antenna with your projection TV, we recommend that you connect an outdoor antenna or a cable TV system to get better picture quality.

### Connecting an antenna

Connect your antenna cable to the VHF/UHF antenna terminal. If you cannot connect your antenna cable directly to the terminal, follow one of the instructions below depending on your cable type.

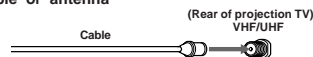


#### Notes

- Most VHF/UHF combination antennas have a signal splitter. Remove the splitter before attaching the appropriate connector.
- If you use the U/V mixer, snow and noise may appear in the picture when viewing cable TV channels over 37.

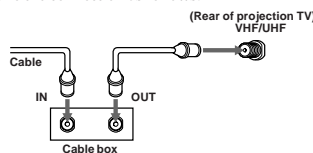
### Connecting an antenna/cable TV system without a VCR

#### To cable or antenna

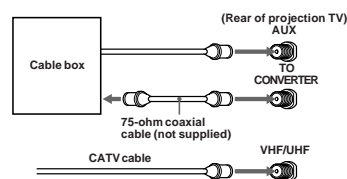


#### To cable box

If your cable company requires you to connect a cable box, make the connection as follows:



#### To cable box and cable



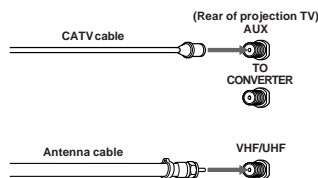
Pay cable TV systems use scrambled or encoded signals requiring a cable box\* in addition to the normal cable connection.

\* The cable box will be supplied by the cable company.

#### Note

- You cannot watch the signal through an AUX connector as a window picture.

#### To cable and antenna



#### Note

- Do not connect anything to the TO CONVERTER connector in this case.

### Connecting an antenna/cable TV system with a VCR

For details on connection, see your VCR instruction manual.

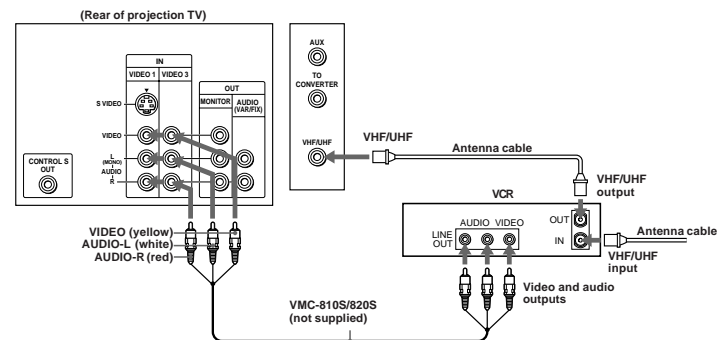
Before making the connection, disconnect the AC power cords of the equipment to be connected.

#### To a conventional VCR

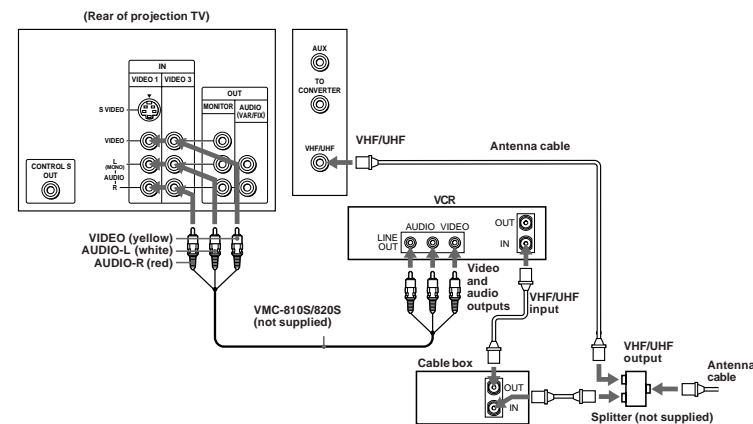
##### Notes

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (MONO) of VIDEO 1/2/3 IN on the projection TV.

#### Without a cable box



#### With a cable box



After making these connections, you will be able to do the following:

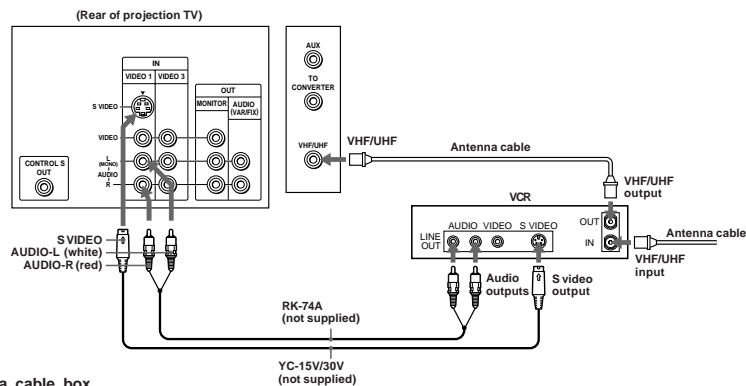
- View the playback of video tapes
- Record one TV program while viewing another program
- Watch two TV programs at once using PIP

EN

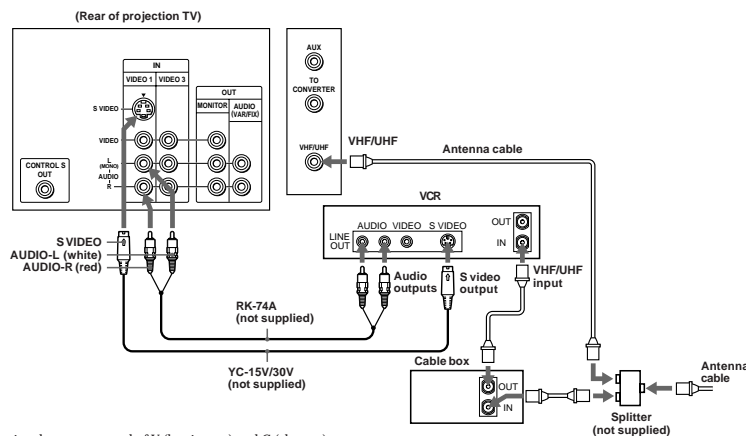
## To an S video equipped VCR

If your VCR has an S VIDEO output connector, make the following connections.  
Whenever you connect the cable to the S VIDEO input connector, the projection TV automatically receives S video signals.

### Without a cable box



### With a cable box



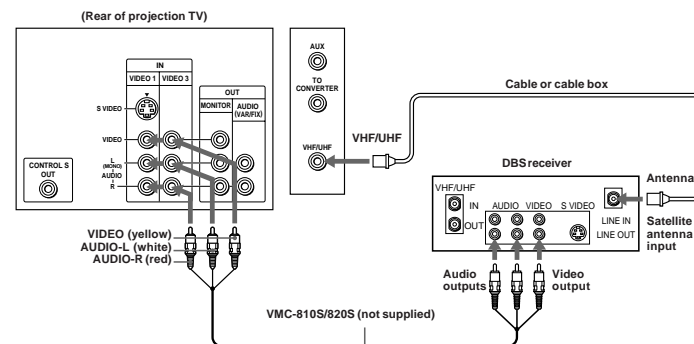
**Note**

- Video signals are composed of Y (luminance) and C (chroma) signals. The S connection sends the two signals separately preventing degradation, and gives better picture quality compared to conventional connections.

## Connecting a DBS receiver

For details on connection, see the instruction manual of the DBS (Digital Broadcasting Satellites) receiver.

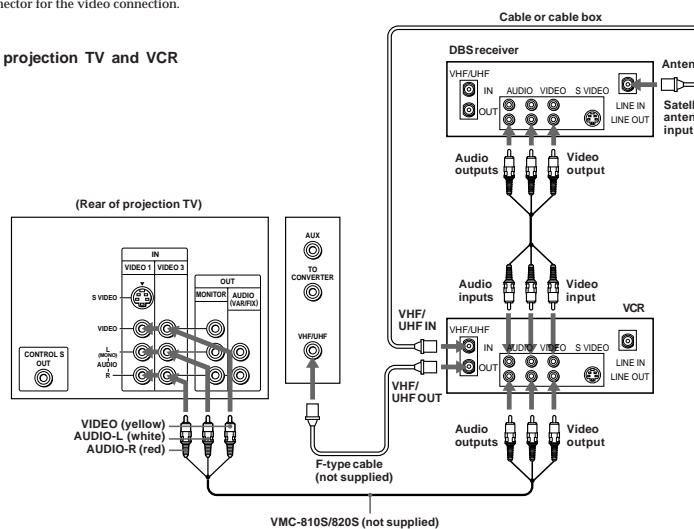
### To a projection TV



### Note

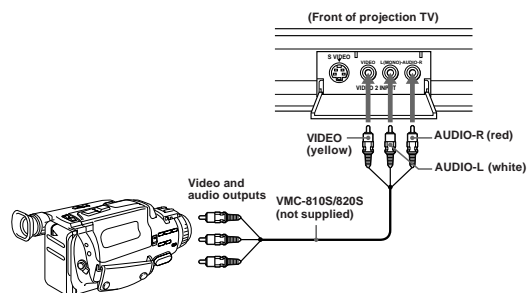
- You can use the S VIDEO connector or the composite video connector for the video connection.

### To a projection TV and VCR



## Connecting a camcorder

Use this connection to view a camcorder picture.

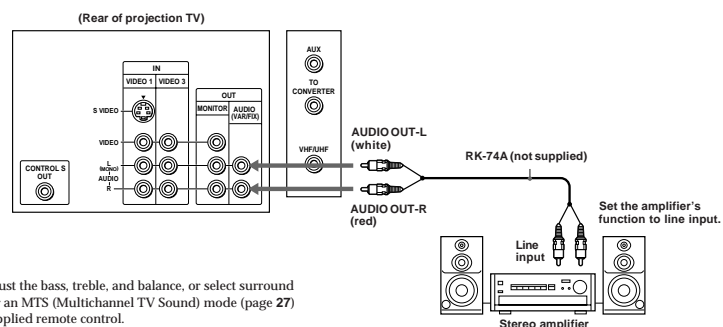


### Note

- To connect a monaural camcorder, connect the audio output of the camcorder to AUDIO-L (MONO) of VIDEO 2 INPUT on the projection TV.

## Connecting an audio system

When connecting audio equipment, see page 28 for more information.

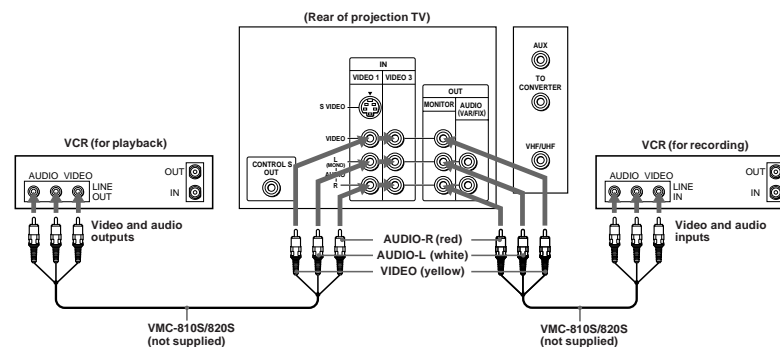


### Note

- You can adjust the bass, treble, and balance, or select surround (page 26) or an MTS (Multichannel TV Sound) mode (page 27) with the supplied remote control.

## Connecting two VCRs for tape editing using MONITOR OUT

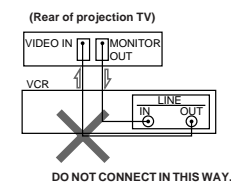
You can record input images displayed on the screen. This type of connection should be used only when you connect from the line input of one VCR, and from the line output of a second VCR.



### Notes

- Do not change the input signal while editing through MONITOR OUT, or the output signal will also change.
- You can use the S video jack to connect a VCR for playback and the composite video connector to connect a VCR for recording.


- When connecting a single VCR to the projection TV, do not connect the MONITOR OUT to the VCR's line input, while at the same time connecting from the projection TV's VIDEO IN connectors to the VCR's line output, as shown below.

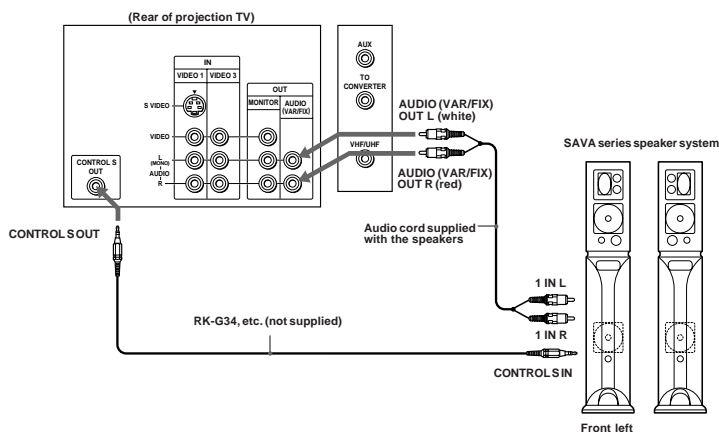




## Connecting a Sony SAVA series speaker system

If you have a Sony SAVA series speaker system, connect your speakers to the AUDIO (VAR/FIX) OUT jacks on the rear of the projection TV with the audio cable supplied with the speakers. You can take advantage of the speakers' Dolby Pro Logic\* surround system and super woofer mode, and control them with the supplied remote control. When connecting a Sony SAVA series speaker system, see page 27 for more information.

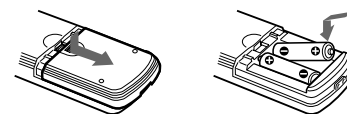
\* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under Canadian patent number 1,037,877. "Dolby," the double-D symbol  and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.



## Step 3: Setting up the remote control

### Inserting batteries

Insert two size AA (R6) batteries (supplied) by matching the + and - on the battery to the diagram inside the battery compartment.



### Notes

- Under normal conditions, batteries will last up to six months. If the remote control does not operate properly or the indicators of the buttons on the remote control do not light up, the batteries may be worn out. When replacing batteries, replace both of them with new ones.
- Do not mix old batteries with new ones or mix different types of batteries together.
- If the electrolyte inside the battery should leak, wipe the contaminated area of the battery compartment with a cloth and replace the old batteries with new ones. To prevent the electrolyte from leaking, remove the batteries when you don't plan to use the remote control for a long period of time.
- Do not handle the remote control roughly. Do not drop it, step on it, or let it get wet.
- Do not place the remote control in direct sunlight, near a heater, or where the humidity is high.

## Getting to know buttons on the remote control

Names of buttons on the remote control are indicated in different colors to represent the available functions.

### Button color

Transparent ..... TV/VCR/DBS/Cable box function buttons. Press the appropriate function button first to change the remote control's function.

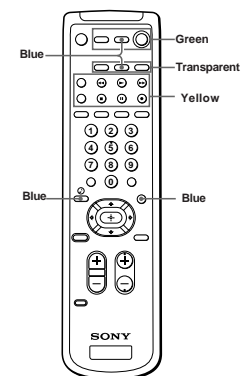
Green ..... Buttons relevant to power operations.

### Label color

White ..... TV/VCR/DBS/Cable box operation buttons.

Yellow ..... PIP operation buttons.

Blue ..... DBS operation buttons.



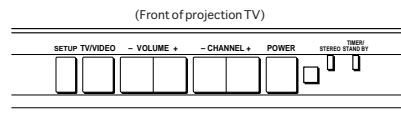
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## Step 4: Setting up the projection TV automatically

### (AUTO SET UP)

You can set up your projection TV easily by using the AUTO SET UP feature. It presets all the receivable channels, adjusts the convergence and changes the on-screen menu language. To set up the projection TV manually, see "Adjusting convergence" (page 16), "Setting cable TV on or off" (page 17), "Presetting channels" (page 18) and "Changing the menu language" (page 18).

If the projection TV is set to a video input, you cannot perform AUTO SET UP. Press TV/VIDEO so that a channel number appears.



Before you start using AUTO SET UP, be sure to connect the antenna or cable to the projection TV (see page 6).

#### 1 Press POWER to turn the projection TV on.



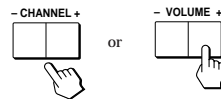
#### 2 Press SETUP on the front of the projection TV.

AUTO SET UP screen appears.



#### 3 Press CHANNEL +/- or VOLUME + to select the on-screen menu language.

If you prefer Spanish or French to English, you can change the on-screen menu language.



All of the menus will be set to the factory preset condition in the selected language.

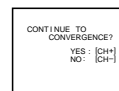
#### 4 Press VOLUME - to start AUTO SET UP.



#### 5 Press CHANNEL + to preset channels.



"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the following menu appears. If the projection TV receives cable TV channels, CABLE is set to ON automatically.

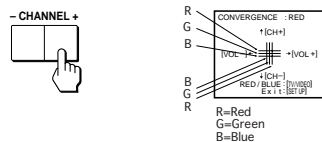


To exit AUTO PROGRAM  
Press any button.

#### 6 Adjust convergence.

##### (1) Press CHANNEL +.

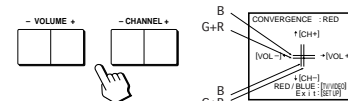
The CONVERGENCE adjustment screen appears.



##### (2) Press TV/VIDEO to select RED or BLUE.

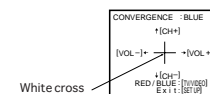


##### (3) Using CHANNEL +/- or VOLUME +/-, move the line until it converges with the center green line.



To move horizontal line up/down, press CHANNEL +/-.  
To move vertical line right/left, press VOLUME +/-.

##### (4) Repeat steps (2) and (3) to adjust the other lines until all three lines converge and are seen as a white cross.



#### Note

- Using the AUX connector, press TV (black button) first and make sure that "AUX" is displayed beside the channel number on the screen. Then follow the steps 2 to 6 above to perform AUTO SET UP.

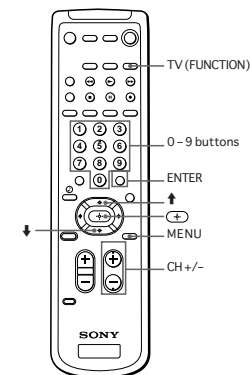
#### To preview the main functions (DEMO)

Press TV/VIDEO on the projection TV in step 4. The functions and menus are displayed one by one.

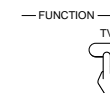
To exit DEMO  
Press any button.

## Erasing or adding channels

After AUTO SET UP, you can erase unnecessary channels or add the channels you want. Preset channels during the day rather than late at night, when some channels may not be broadcasting.



#### 1 Press TV (FUNCTION).



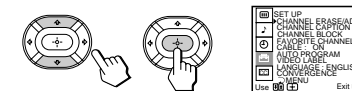
#### 2 Press MENU.

The main menu appears.



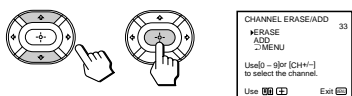
#### 3 Press + or - to select, and press .

The SET UP menu appears.



- 4 Press **+** or **-** to select CHANNEL ERASE/ADD, and press **ENTER**.

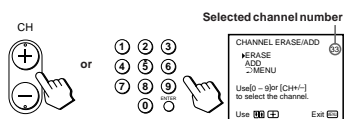
The CHANNEL ERASE/ADD menu appears.



## 5 Erase and/or add channels:

**To erase an unwanted channel**

- (1) Make sure the cursor (▶) is beside ERASE.
- (2) Press CH +/- or the 0 - 9 buttons to select the channel you want to erase, and press ENTER.



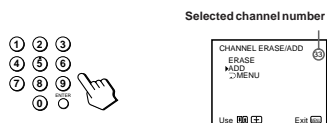
- (3) Press **ENTER**.

The "-" indication appears beside the channel number, showing that the channel is erased from the preset memory.



**To add a channel that you want**

- (1) Press **+** or **-** to move the cursor (▶) to ADD.
- (2) Press the 0 - 9 buttons to select the channel you want to add, and press ENTER.



- (3) Press **ENTER**.

The "+" indication appears beside the channel number, showing that the channel is added to the preset memory.



- 6 To erase and/or add other channels, repeat step 5.

## 7 Press MENU to return to the original screen.



### Notes

- If you erase or add a VHF or UHF channel, the cable TV channel with the same number is also erased or added, and vice versa.
- Erasing and adding channels is also available for the AUX input.

## Adjusting convergence (CONVERGENCE)

The projection tube image appears on the screen in three layers (red, green and blue). If they do not converge, the color is poor and the picture blurs. To correct this, adjust convergence.

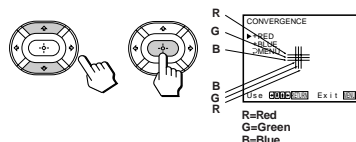
You do not have to do this procedure if you perform AUTO SET UP (page 14). Do this procedure only when you want to adjust it manually.

### 1 Press MENU.

### 2 Press **+** or **-** to select **CONVERGENCE**, and press **ENTER**.

### 3 Press **+** or **-** to select **CONVERGENCE**, and press **ENTER**.

The CONVERGENCE adjustment screen appears.



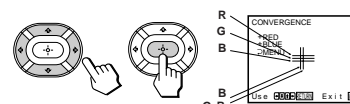
- 4 Press **+**, **-**, **+**, or **-** to move the cursor (▶) to the symbol showing the line you want to adjust, and press **ENTER**.



+RED : Red vertical and horizontal line (left/right/up/down adjustment)

+BLUE : Blue vertical and horizontal line (left/right/up/down adjustment)

- 5 Press **+**, **-**, **+**, or **-** to move the line until it converges with the center green line, and press **ENTER**.



To move	Press
Up	↑
Down	↓
Right	→
Left	←

- 6 Repeat steps 4 and 5 to adjust the other lines until all three lines converge and are seen as a white cross.

## 7 Press MENU to return to the original screen.

## Setting cable TV on or off

If you have connected the projection TV to a cable TV system, set CABLE to ON (the factory setting). If not, set CABLE to OFF.

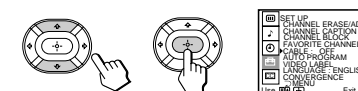
You do not have to do this procedure if you perform AUTO SET UP (page 14). Do this procedure only when you want to set it manually.

### 1 Press MENU.

### 2 Press **+** or **-** to select **CABLE**, and press **ENTER**.

### 3 Set CABLE to ON or OFF:

- (1) Press **+** or **-** to move the cursor (▶) to CABLE, and press **ENTER**.
- (2) Press **+** or **-** to select ON or OFF, and press **ENTER**.



## 4 Press MENU to return to the original screen.

### Note

- If CABLE appears in gray, the projection TV is set to a video input and you cannot select CABLE. Press TV (black button) so that a channel number appears.

## Presetting channels

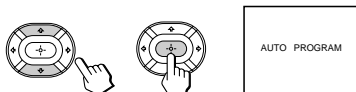
You can preset TV channels easily by using the AUTO PROGRAM feature.

You do not have to do this procedure if you perform AUTO SET UP (page 14). Do this procedure only when you want to set it manually.

1 Press **MENU**.

2 Press **↑** or **↓** to select **⚙**, and press **⏏**.

3 Press **↑** or **↓** to select **AUTO PROGRAM**, and press **⏏**.



"AUTO PROGRAM" appears on the screen and the projection TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed.

4 Press **MENU** to return to the original screen.

To exit **AUTO PROGRAM**  
Press any button.

### Notes

- If the **AUTO PROGRAM** menu appears in gray, the projection TV is set to a video input and you cannot select **AUTO PROGRAM**. Press **ANT** button so that a channel number appears.

- Presetting channels is also available for the **AUX** input.

## Changing the menu language

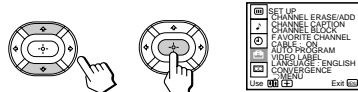
If you prefer Spanish or French to English, you can change the menu language.

You do not have to do this procedure if you select the language during **AUTO SET UP** (page 14). Do this procedure only when you want to set it manually.

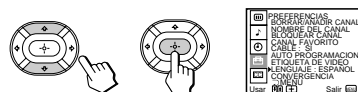
1 Press **MENU**.

2 Press **↑** or **↓** to select **⚙**, and press **⏏**.

3 Press **↑** or **↓** to select **LANGUAGE**, and press **⏏**.



4 Press **↑** or **↓** to select your favorite language, "**ENGLISH**", "**ESPAÑOL**," or "**FRANÇAIS**" and press **⏏**.



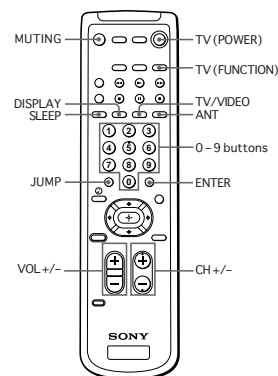
5 Press **MENU** to return to the original screen.

### Note

- Certain parts of the Spanish or French menus remain in English.

## Operations

### Watching the TV



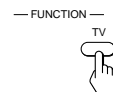
1 Press **TV (POWER)** to turn on the projection TV.

The **TIMER/STANDBY** indicator flashes until the picture appears.



If "**VIDEO**" appears on the screen, press **ANT** so that a channel number appears.

2 Press **TV (FUNCTION)**.



Once you press **TV (FUNCTION)**, the projection TV function is set unless another function button is pressed.

3 Select the channel you want:

To select a channel directly

Press the 0 - 9 buttons, and press **ENTER**.

For example, to select channel 10, press 1, 0 and **ENTER**.



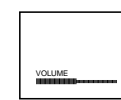
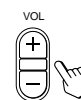
To scan through channels

Press **CH +/-** until the channel you want appears.



The channel can also be selected without pressing **ENTER**.

4 Press **VOL +/-** to adjust the volume.



### Switching quickly between two channels

You can use the **JUMP** button to switch or "jump" back and forth between two channels.

Press **JUMP**.



Pressing **JUMP** again switches the channel back to the one you selected last.

### Note

- You cannot jump to channels you scanned through using the **CH +/-** buttons.

### Muting the sound

Press **MUTING**.

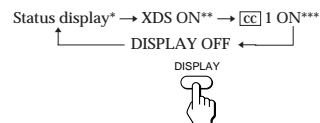
"**MUTING**" appears on the screen.



To restore the sound, press **MUTING** again, or press **VOL +**.

## Displaying on-screen information

Press **DISPLAY** repeatedly until the desired display appears.  
Each time you press **DISPLAY**, the display changes as follows:



- \* Channel number, the current time, channel caption (if set), and MTS mode (if SAP is selected) are displayed. SAP indication disappears after three seconds.
- \*\* Some programs are broadcast with XDS (Extended Data Service) which shows a network name, program name, program type, program length, call letters, and time of the show. When you select XDS with the **DISPLAY** button, this information will be displayed on the screen if the broadcaster offers this service.
- \*\*\* Some programs are broadcast with Caption Vision. When you select Caption Vision with the **DISPLAY** button, Caption Vision will be displayed on the screen if the broadcaster offers this service. (See page 34 for selecting Caption Vision.)

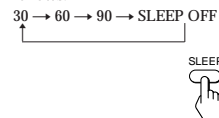
To cancel the display, press **DISPLAY** repeatedly until "DISPLAY OFF" appears. "DISPLAY OFF" goes off after three seconds.

## Setting the Sleep Timer

The projection TV stays on for the length of time you specify and then shuts off automatically.

Press **SLEEP** repeatedly until the time (minutes) you want appears.

Each time you press **SLEEP**, the time changes as follows:

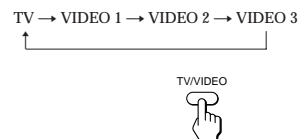


To cancel the Sleep Timer, press **SLEEP** repeatedly until "SLEEP OFF" appears, or turn off the projection TV.

20-EN Operations

## Watching a video input picture

Press **TV/VIDEO** repeatedly until the desired video input appears.  
Each time you press **TV/VIDEO**, the display changes as follows:



To return to the TV picture, press **ANT** so that a channel number appears.

## Changing the VHF/UHF input to the AUX input

Press **ANT**.

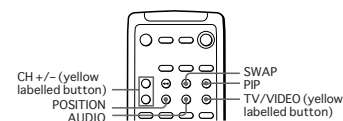
"AUX" appears beside the channel number.



Pressing **ANT** again switches back to the VHF/UHF input.

## Watching two programs at one time — PIP

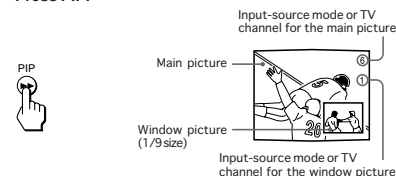
The Picture-in-Picture (PIP) feature allows you to watch both the main picture and a window picture simultaneously.



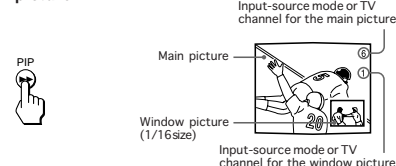
Use the yellow labelled buttons for PIP operations.

### Displaying a window picture

Press **PIP**.



Press **PIP** again to display a smaller window picture.



To remove the window picture, press **PIP** again.

**Note**

- The window picture may be affected by the condition of the main picture.

## Changing the window picture input mode

Press **TV/VIDEO** (yellow labelled button) to select the input mode.

Each time you press **TV/VIDEO** (yellow labelled button), "TV", "VIDEO 1", "VIDEO 2", and "VIDEO 3" appear in sequence.



A window picture will appear in the same input mode as the last time you used PIP.

**Note**

- If you connect your VCR without a cable box, your PIP input source is a VCR. If you connect your VCR with a cable box, your PIP input source is a VCR or cable box.

## Listening to the sound of the window picture

EN

Press **AUDIO**.

The display appears next to the PIP channel number for a few seconds, indicating that the window picture sound is being received.

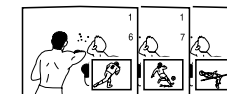
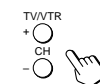


The sound of the window picture is received.

To restore the main picture sound, press **AUDIO** again. The display moves to the main picture channel number.

## Changing TV channels in the window picture

Press **CH +/-** (yellow labelled button).

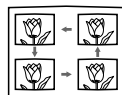


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## Changing the position of the window picture

### Press POSITION.

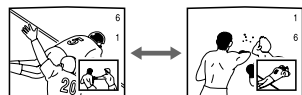
Each time you press POSITION, the window picture will move counterclockwise on the screen.



## Swapping the main and window pictures

### Press SWAP.

Each time you press SWAP, the images and sound from the main and window pictures switch places with another.

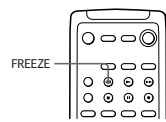


### Note

- The channels being received through the AUX connector cannot be displayed as a window picture.

## Freezing the picture (FREEZE)

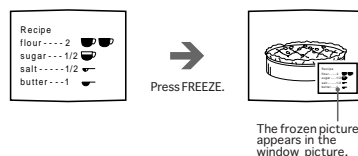
The FREEZE feature is useful when you want to write down an information such as a recipe from a cooking program, a displayed address, or a phone number. The frozen picture changes as follows depending on whether the PIP function is used or not.



Press FREEZE.



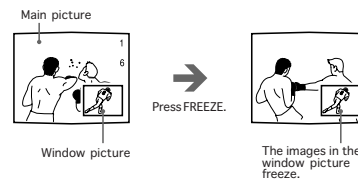
When the PIP function is not being used



The frozen picture appears in the window picture.

To remove the frozen window picture, press FREEZE again.

When the PIP function is being used

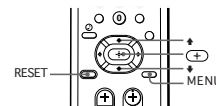


The images in the window picture freeze.

To cancel the frozen window picture, press FREEZE again.

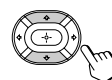
## Adjusting the picture (VIDEO)

When watching TV programs, you can adjust the picture to suit your taste. You can adjust the picture of video input(s) as well.



1 Press MENU.

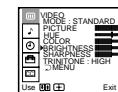
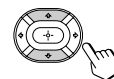
2 Press ▲ or ▼ to select **VIDEO**, and press **ENTER**.



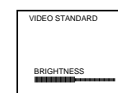
3 Select the item you want to adjust.

For example:

(1) To adjust the brightness, press ▲ or ▼ to move the cursor (▶) to BRIGHTNESS.

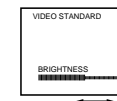
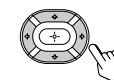


(2) Press **ENTER**.



4 Adjust the selected item:

(1) Press ▲, ▼, ◀, ▶, or ⬅ to adjust the item.



(2) Press **ENTER**.

The new setting appears in the VIDEO menu.



For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4.

6 Press MENU to return to the original screen.

EN

### Description of adjustable items

Item	Press ▲ or ▼ to	Press ◀ or ▶ to
PICTURE	Decrease picture contrast and give soft color.	Increase picture contrast and give vivid color.
HUE	Make picture tones become purplish.	Make picture tones become greenish.
COLOR	Decrease color intensity.	Increase color intensity.
BRIGHTNESS	Darken the picture.	Brighten the picture.
SHARPNESS	Soften the picture.	Sharpen the picture.

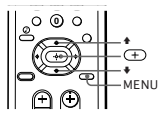
### To restore the factory settings

Press RESET after displaying and selecting the VIDEO menu.

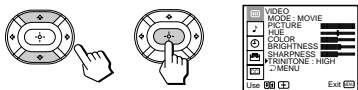
All of the settings are restored to the factory settings.

## Adjusting the color temperature (TRINITONE)

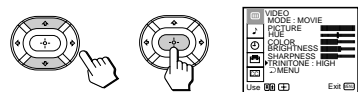
The TRINITONE feature controls the color temperature, permitting white balance preference adjustment without affecting skin tones.



- 1 Press MENU.
- 2 Press  $\uparrow$  or  $\downarrow$  to select  $\blacksquare$  and press  $\rightarrow$ .
- 3 Press  $\uparrow$  or  $\downarrow$  to select TRINITONE and press  $\rightarrow$ .



- 4 Press  $\uparrow$  or  $\downarrow$  to select NTSC STD, MEDIUM, or HIGH and press  $\rightarrow$ .



Choose	To
HIGH	a cool (bluish) white.
MEDIUM	a neutral white.
NTSC STD	a warm (reddish) white.

## Selecting the video mode (VIDEO)

The video mode feature allows you to choose three different modes of picture settings. Choose the one that best suits the type of program that you want to watch.

- 1 Press MENU.
- 2 Press  $\uparrow$  or  $\downarrow$  to select  $\blacksquare$  and press  $\rightarrow$ .
- 3 Press  $\uparrow$  or  $\downarrow$  to select MODE, and press  $\rightarrow$ .
- 4 Press  $\uparrow$  or  $\downarrow$  to select STANDARD, MOVIE, or SPORTS mode, and press  $\rightarrow$ .



Choose	To
STANDARD	Receive a standard picture.
MOVIE	Receive a finely detailed picture.
SPORTS	Receive a vivid, bright picture.

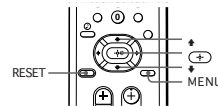
- 5 Press MENU to return to the original screen.

### Note

- The settings for these modes can be adjusted in the VIDEO menu.

## Adjusting the sound (AUDIO)

You can adjust the quality of the TV sound to suit your taste. You can adjust the sound of the video input(s) as well.



- 1 Press MENU.
- 2 Press  $\uparrow$  or  $\downarrow$  to select  $\blacksquare$ , and press  $\rightarrow$ .



- 3 Select the item you want to adjust.

### For example:

- (1) To adjust bass, press  $\uparrow$  or  $\downarrow$  to move the cursor (►) to BASS.



- (2) Press  $\rightarrow$ .



- 4 Adjust the selected item:

- (1) Press  $\uparrow$ ,  $\downarrow$ ,  $\leftarrow$ , or  $\rightarrow$  to adjust the item.



- (2) Press  $\rightarrow$ .

The new setting appears in the AUDIO menu.



For details on each item, see "Description of adjustable items" below.

- 5 To adjust other items, repeat steps 3 and 4.

- 6 Press MENU to return to the original screen.

EN

### Description of adjustable items

Item	Press $\uparrow$ or $\downarrow$ to	Press $\leftarrow$ or $\rightarrow$ to
TREBLE	Decrease the treble response.	Increase the treble response.
BASS	Decrease the bass response.	Increase the bass response.
BALANCE	Emphasize the left speaker's volume.	Emphasize the right speaker's volume.

### To restore the factory settings

Press RESET after displaying and selecting the AUDIO menu.

All of the settings are restored to the factory settings.

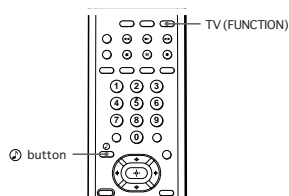
### Note



- When SPEAKER (page 27) is OFF and AUDIO OUT (page 28) is in the FIXED condition, the volume, TREBLE, BASS, and BALANCE cannot be adjusted.

## Using audio effect (SURROUND)

The audio effect (SURROUND) feature simulates sound reproduction with the atmosphere of a movie theater or a concert hall. Audio effect is only effective for stereo programs.

### Using the (audio effect) button

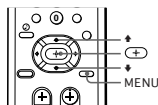









- 1 Press TV (FUNCTION).
  - 2 Press .
- Each time you press the  button, the display changes as follows:

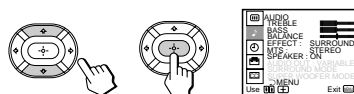
SURROUND → SURROUND OFF






### Using the menu to set audio effect



- 1 Press MENU.
- 2 Press  or  to select , and press .
- 3 Press  or  to select EFFECT, and press .



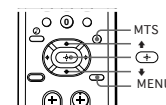
- 4 Press  or  to select the audio effect mode, and press .



- 5 Press MENU to return to the original screen.

## Selecting stereo or bilingual programs (MTS)

The Multichannel TV Sound (MTS) feature allows you to enjoy stereo sound or Second Audio Programs (SAP) of your choice. The initial setting is stereo sound (STEREO).



Press MTS repeatedly to select STEREO, SAP, or MONO.










STEREO → SAP → MONO

Choose	To
STEREO	Listen to stereo sound. The STEREO indicator on the projection TV lights up when a stereo broadcast is received.
SAP	Listen to bilingual programs. There is no sound when the SAP signal is not broadcasting.
MONO	Listen to monaural sound. Reduce noise during stereo broadcasts.

#### Note

- Stereo and SAP sounds are subject to program sources.

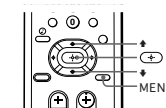
#### To set MTS using the menu

- 1 Press MENU.
- 2 Press  or  to select , and press .
- 3 Press  or  to select MTS, and press .
- 4 Press  or  to select STEREO, SAP, or MONO.
- 5 Press MENU to return to the original screen.











## Setting the speaker switch (SPEAKER)

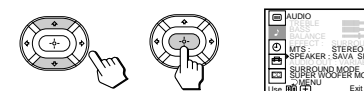
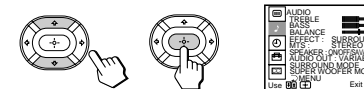
You may switch off the projection TV speakers when, for example, you want to listen to the sound through a stereo system.

If you connect the Sony SAVA series speaker system to the AUDIO (VAR/FIX) OUT connectors, you can take advantage of the speakers' surround sound and super woofer mode. After making the connections (page 12), set SPEAKER to SAVA SPEAKER, then adjust SURROUND MODE or SUPER WOOFER MODE.



EN

- 1 Press MENU.
- 2 Press  or  to select , and press .
- 3 Press  or  to select SPEAKER, and press .
- 4 Press  or  to select ON, OFF, or SAVA SP, and press .



- 5 Press MENU to return to the original screen.

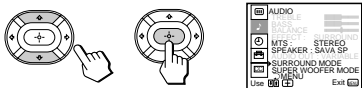


Choose	To
ON	Listen to the sound from the projection TV.
OFF	Turn off the projection TV speaker sound and listen to the projection TV's sound solely through the audio system speakers.
SAVA SP	Turn off the projection TV speaker sound and listen to the projection TV's sound through the Sony SAVA series speaker system. You can adjust volume, muting, surround modes, and super woofer mode with the remote control supplied with the projection TV.

### To select surround sound or super woofer mode of the SAVA speaker system

After setting SPEAKER to SAVA SP, follow the procedure below.

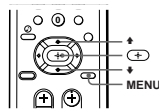
Press **↑** or **↓** to select **SURROUND MODE** or **SUPER WOOFER MODE**, and press **↵**.  
For details on each option, refer to the operating instructions of the speaker system.



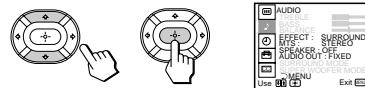
- Note**
- This feature is only for Sony SAVA speaker system with an operation capability for KP-41T65, KP-46C65, KP-48S65, KP-53S65, and KP-61S65.

## Setting audio out (AUDIO OUT)

You can change AUDIO OUT to VARIABLE or FIXED when SPEAKER is set to OFF.  
AUDIO OUT is variable when SPEAKER is set to ON.



- Press **MENU**.
- Press **↑** or **↓** to select **↓**, and press **↵**.
- Press **↑** or **↓** to select **AUDIO OUT**, and press **↵**.



- Press **↑** or **↓** to select **VARIABLE** or **FIXED**, and press **↵**.



**VARIABLE:** Sound output varied according to the projection TV settings. You can adjust the volume, bass, treble, and balance.

**FIXED:** Sound output is always fixed to a certain level. The volume, bass, treble, and balance are also fixed to the factory settings.

- Press **MENU** to return to the original screen.

- Note**
- If AUDIO OUT appears in gray, set SPEAKER to OFF.

## Setting daylight saving time (DAYLIGHT SAVING)

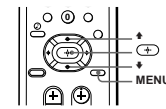
If your area uses daylight saving time, change DAYLIGHT SAVING setting depending on the season, before setting the current time.

### Daylight saving start

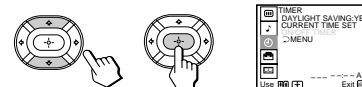
- After the first Sunday in April, set DAYLIGHT SAVING to YES. Current time setting (right column) automatically moves one hour ahead.

### Daylight saving end

- After the last Sunday in October, set DAYLIGHT SAVING to NO. Current time setting automatically moves one hour back.



- Press **MENU**.
- Press **↑** or **↓** to select **↓**, and press **↵**.
- Press **↑** or **↓** to select **DAYLIGHT SAVING**, and press **↵**.



- Press **↑** or **↓** to select **YES** or **NO**, and press **↵**.

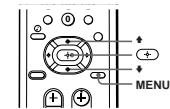


Choose	To
YES	Set for daylight saving start.
NO	Set for daylight saving end.

- Press **MENU** to return to the original screen.

## Setting the clock (CURRENT TIME SET)

Setting the clock enables you to turn the projection TV on and off with the timer. Make sure to set daylight saving time first.



- Press **MENU**.
- Press **↑** or **↓** to select **↓**, and press **↵**.
- Press **↑** or **↓** to select **CURRENT TIME SET**, and press **↵**.



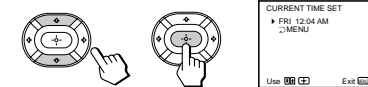
- Make sure the cursor (▶) is to the left of "--:-- AM," and press **↵**.



- Set the current day of the week and time.  
(1) Press **↑** or **↓** to set the day of the week, and press **↵**.



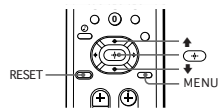
- Set the hour and minutes in the same way as in step (1). When you press **↵** after setting the minutes, the clock starts.



- Press **MENU** to return to the original screen.

## Setting the timer to turn the projection TV on and off (ON/OFF TIMER)

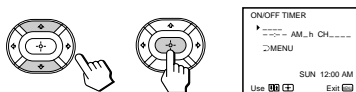
You can set the projection TV to turn on and off at the times you specify. Make sure the clock is set correctly. If it is not, set the clock first (page 29).



1 Press MENU.

2 Press  $\blacktriangle$  or  $\blacktriangledown$  to select  $\odot$ , and press  $\rightarrow$ .

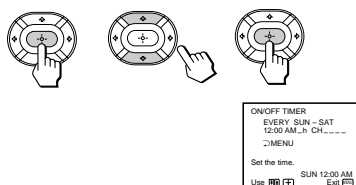
3 Press  $\blacktriangle$  or  $\blacktriangledown$  to select ON/OFF TIMER, and press  $\rightarrow$ .



4 Press  $\rightarrow$  and enter the ON/OFF TIMER setting.

(1) Press  $\blacktriangle$  or  $\blacktriangledown$  to set the day(s), and press  $\rightarrow$ .

Each time you press  $\blacktriangle$  or  $\blacktriangledown$ , the days cycle as follows:  
 EVERY SUN-SAT  $\rightarrow$  EVERY MON-FRI  $\rightarrow$  SUNDAY  $\rightarrow$  ...  $\rightarrow$  SATURDAY  $\rightarrow$  EVERY SUNDAY  $\rightarrow$  ...  $\rightarrow$  EVERY SATURDAY

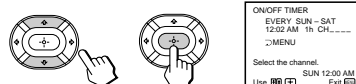


(2) Press  $\blacktriangle$  or  $\blacktriangledown$  to set the time (hour then minutes) that you want to turn on the projection TV, and press  $\rightarrow$ .

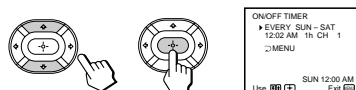


(3) Press  $\blacktriangle$  or  $\blacktriangledown$  to set the time duration, and press  $\rightarrow$ .

Each time you press  $\blacktriangle$ , the time duration increases by one hour up to a maximum of six hours.



(4) Press  $\blacktriangle$  or  $\blacktriangledown$  to select the channel, and press  $\rightarrow$ .



The TIMER indicator on the projection TV lights up.

5 To set the other program, press  $\leftarrow$ , and repeat step 4.

6 Press MENU to return to the original screen.

One minute before the projection TV turns off, the message "TV will turn off soon." is displayed on the screen.

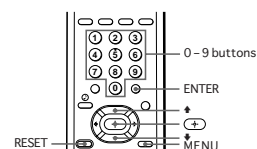
To cancel the timer  
 In step 3 or 4, press RESET.

### Note

- If you unplug the projection TV or a power interruption occurs, the ON/OFF TIMER setting will be erased. Reset the current time, then set the timer.

## Customizing the channel names (CHANNEL CAPTION)

You can add a caption for up to 12 channels. This feature allows you to easily identify which channel you are watching. You can make your own caption.

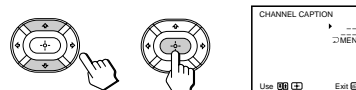


1 Press MENU.

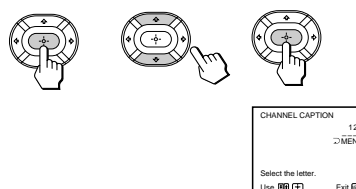
2 Press  $\blacktriangle$  or  $\blacktriangledown$  to select  $\text{CH}$ , and press  $\rightarrow$ .



3 Press  $\blacktriangle$  or  $\blacktriangledown$  to select CHANNEL CAPTION, and press  $\rightarrow$ .



4 Press  $\rightarrow$  and press  $\blacktriangle$  or  $\blacktriangledown$  to select the channel that you want to caption, and press  $\rightarrow$ .

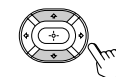


5 Enter the letters (up to four) to caption the channel:

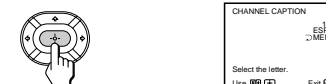
(1) Press  $\blacktriangle$  or  $\blacktriangledown$  to select the first letter.

Each time you press  $\blacktriangle$  or  $\blacktriangledown$ , the letter changes as follows:

0..9  $\rightarrow$  A..Z  $\rightarrow$  / \_ (blank space)



(2) Press  $\rightarrow$ .



(3) Repeat steps (1) and (2) to select the remaining letters, and press  $\rightarrow$ .

6 Repeat steps 4 and 5 to caption other channels.

7 Press MENU to return to the original screen.

After you customize the channel, the channel caption appears green.

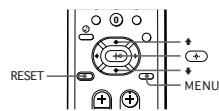
To erase a caption  
 In step 5, press RESET.


### Notes

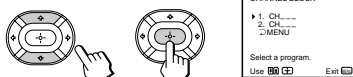
- If the CHANNEL CAPTION menu appears in gray, the projection TV is set to a video input, and you cannot select CHANNEL CAPTION. Press TV (black button) so that a channel number appears.
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.
- The channel caption feature is not available for the AUX input.

## Blocking out a channel (CHANNEL BLOCK)

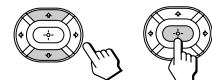
The channel block feature allows you to prevent children from watching unsuitable programs. You can block out two channels.



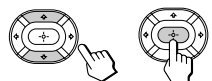
- 1 Press MENU.
- 2 Press  $\uparrow$  or  $\downarrow$  to select , and press  $\rightarrow$ .
- 3 Press  $\uparrow$  or  $\downarrow$  to select CHANNEL BLOCK, and press  $\rightarrow$ .



- 4 Press  $\uparrow$  or  $\downarrow$  to select program 1 or 2, and press  $\rightarrow$ .



- 5 Press  $\uparrow$  or  $\downarrow$  to select the channel which you want to block out, and press  $\rightarrow$ .



- 6 Press MENU to return to the original screen. When you select the blocked channel, the message "BLOCKED" appears on the screen.



To cancel a CHANNEL BLOCK setting  
In step 4 or 5, press RESET.

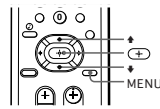
**Note**


- Once you use CHANNEL BLOCK, Caption Vision and XDS of the blocked channel and the selected channel output from MONITOR OUT are also blocked out.

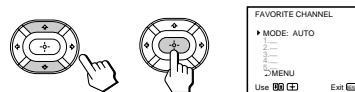
## Setting your favorite channels (FAVORITE CHANNEL)

The favorite channel feature allows your projection TV to memorize your favorite channels easily. If you set to AUTO, the last five channels you selected with the 0 - 9 buttons are automatically set as your favorite channels. If you want to input your own selection of channels, set to MANUAL.

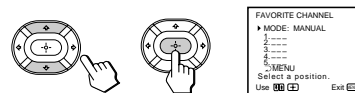
### Setting your favorite channels



- 1 Press MENU.
- 2 Press  $\uparrow$  or  $\downarrow$  to select , and press  $\rightarrow$ .
- 3 Press  $\uparrow$  or  $\downarrow$  to select FAVORITE CHANNEL, and press  $\rightarrow$ .



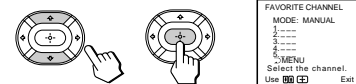
- 4 Press  $\rightarrow$  and press  $\uparrow$  or  $\downarrow$  to select AUTO or MANUAL, and press  $\rightarrow$ .



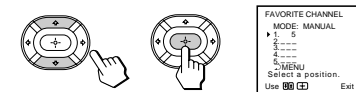
If you select AUTO, skip steps 5 and 6.  
The last five channels you selected with the 0 - 9 buttons are automatically set as your favorite channels.

If you select MANUAL, the favorite channel numbers become white, indicating that favorite channels can be entered.

- 5 Press  $\uparrow$  or  $\downarrow$  to select a favorite channel number, and press  $\rightarrow$ .



- 6 Press  $\uparrow$  or  $\downarrow$  to select the channel that you want to set as your favorite channel, and press  $\rightarrow$ .

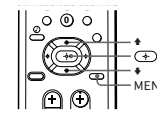


- 7 Press MENU to return to the original screen.

#### Notes

- If the FAVORITE CHANNEL menu appears in gray, the projection TV is set to a video input and you cannot select FAVORITE CHANNEL.
- If more than 90 seconds elapse after you press another button, the menu disappears automatically.
- The favorite channel feature is not available for the AUX input.

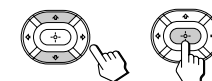
### Selecting your favorite channel



- 1 Press  $\rightarrow$ .  
The FAVORITE CHANNEL menu appears.



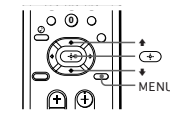
- 2 Press  $\uparrow$  or  $\downarrow$  to select the favorite channel you want to watch, and press  $\rightarrow$ .  
The selected channel appears on the screen.




To cancel the FAVORITE CHANNEL menu  
Press  $\uparrow$  or  $\downarrow$  to select "Exit," and press  $\rightarrow$ .

## Setting video labels (VIDEO LABEL)

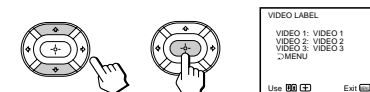
The video label feature allows you to label each input mode so that you can easily identify the connected equipment. For example, you can label VIDEO 1 as VHS.



- 1 Press MENU.
- 2 Press  $\uparrow$  or  $\downarrow$  to select , and press  $\rightarrow$ .
- 3 Press  $\uparrow$  or  $\downarrow$  to select VIDEO LABEL, and press  $\rightarrow$ .



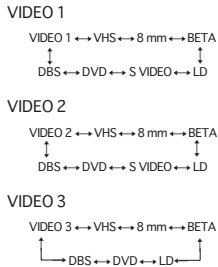
- 4 Press  $\uparrow$  or  $\downarrow$  to select the input mode you want to label, and press  $\rightarrow$ .



- 5 Press  $\uparrow$  or  $\downarrow$  to select the label, and press  $\rightarrow$ .



Each time you press  $\blacktriangle$  or  $\blacktriangledown$ , the label changes as follows:

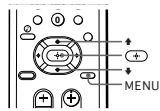


**6 Repeat steps 4 and 5 to label other input modes.**

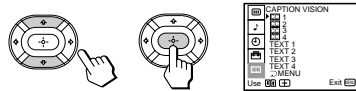
- Note**
- If more than 90 seconds elapse before you press another button, the menu disappears automatically.

## Setting Caption Vision (CAPTION VISION)

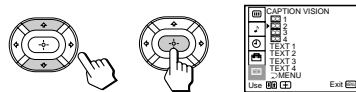
Some programs are broadcast with Caption Vision. To display Caption Vision, select either CC1, CC2, CC3, CC4, TEXT1, TEXT2, TEXT3, or TEXT4 from the menu. CC1, CC2, CC3, or CC4 shows you on-screen version of the dialogue or sound effects of a program. (The mode should be set to CC1 for most programs.) TEXT1, TEXT2, TEXT3, or TEXT4 shows you on-screen information presented using either half or the whole screen. It is not usually related to the program.



- 1 Press **MENU**.
- 2 Press  $\blacktriangle$  or  $\blacktriangledown$  to select **CC**, and press **ENTER**.



- 3 Press  $\blacktriangle$  or  $\blacktriangledown$  to select the caption type, and press **ENTER**.



- 4 Press **MENU** to return to the original screen.

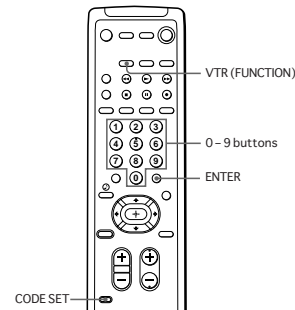
**To display Caption Vision**  
Press **DISPLAY**. (See page 20 for details.)

- Notes**
- Poor reception of TV programs can cause errors in Caption Vision and XDS.  
Captions may appear with a white box or other errors instead of a certain word.
  - XDS, Caption Vision, and the status display cannot be used at the same time.
  - For details on XDS, see page 20.

## Operating video equipment

You can use the supplied remote control to operate Sony or non-Sony video equipment that has an infrared remote sensor. For this operation, set the manufacturer's code number.

### Setting the manufacturer's code



Press the **CODE SET**, **VTR (FUNCTION)**, and **0-9** buttons to enter the manufacturer's code number (see the chart on page 35-36), then press **ENTER**.  
For example, to operate a Sony 8 mm VCR, press **CODE SET**, **VTR (FUNCTION)**, **3**, **0**, **2**, and **ENTER**.



### VCR manufacturer code numbers

Manufacturer	Code number
Sony	301, 302, 303
Aiwa	338
Audio Dynamic	314, 337
Bell & Howell (M. Wards)	330, 343
Brocsonic	319
Canon	309, 308
Citizen	332
Craig	315, 302, 332
Curtis Mathis	304, 338, 309
Daewoo	341, 312, 309
DBX	314, 336, 337
Dimensia	304
Emerson	319, 320, 316, 317, 318
Fisher	330, 334, 335, 333
Funai	338
General Electric	329, 304, 309
Goldstar	332
Hitachi	306, 304, 305
Instant Replay	309, 308
JC Penny	309, 305, 304, 330, 314, 336, 337
JVC	314, 336, 337
Kenwood	314, 336, 332, 337
LXI (Sears)	332, 305, 333, 334, 330, 335
Magnavox	308, 309
Marantz	314, 336, 337
Marta	332
Memorex	309, 335
Minolta	305, 304
Mitsubishi/MGA	323, 324, 325, 326
Multitech	325, 338, 321
NEC	314, 336, 337
Olympic	309, 308
Panasonic	308, 309, 306, 307
Pentax	305, 304
Philco	308, 309
Philips	308, 309
Pioneer	308
Quasar	308, 309
RCA/PROSCAN	304, 305, 308, 309, 311, 312, 313
Realistic	309, 330, 328, 335, 324, 338
Sansui	314
Singer	315
Samsung	322, 313, 321
Sanyo	330, 335
Scott	312, 313, 321, 335, 323, 324, 325, 326
Sharp	327, 328
Shintom	315
Signature 2000 (M. Wards)	338, 327
Sylvania	308, 309, 338
Symphonic	338
Tashiro	332
Tatung	314, 336, 337
Teac	314, 336, 338, 337
Technics	309, 308
Toshiba	312, 311
Wards	327, 328, 335, 331, 332
Yamaha	330, 314, 336, 337
Zenith	331

EN

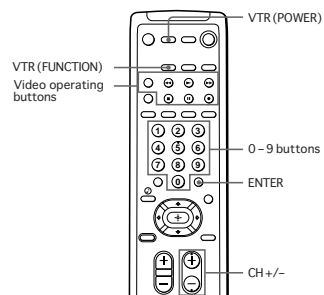
## MDP manufacturer code numbers

Manufacturer	Code number
Sony	701
Kenwood	707
Magnavox	703
Marantz	702
Mitsubishi	702
Panasonic	704
Philips	703
Pioneer	702
RCA	702
Sanyo	706
Sharp	705
Yamaha	703

### Notes

- If more than one code number is listed, try entering them one by one, until you come to the correct code for your equipment.
- In some rare cases, you may not be able to operate your non-Sony video equipment with the supplied remote control. This is because your equipment may use a code that is not included with this remote control. In this case, please use the equipment's own remote control unit.
- The code numbers for Sony equipment are assigned at the factory as follows:  
VHS VCR 301 (preset code for the supplied remote control)  
8 mm VCR 302  
Beta, ED Beta VCRs 303
- Whenever you remove the batteries — to replace them, for example — if too much time is taken, the code number may revert to the factory setting and must be reset.

## Operating video equipment



Use the video operating buttons on the remote control to operate the video equipment. Press VTR (FUNCTION) before operating the video equipment.

Operating a VCR	Buttons on the remote control
To turn on or off	Press VTR (POWER).
To select a channel directly	Press the 0 - 9 buttons.
To change channels	Press CH +/-.
To record	Press ► while pressing ●. First release ►, then release ●.
To play	Press ►.
To stop	Press ■.
To fast forward	Press ►►.
To rewind the tape	Press ◄◄.
To pause	Press II.
	To resume normal playback, press again.
To search the picture forward or backward	Press ►► or ◄◄ during playback. To resume normal playback, release the button.
To change input mode	Press TV/VTR.

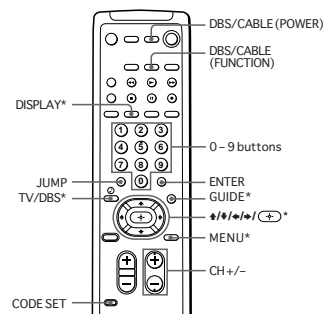
Operating an MDP	Buttons on the remote control
To turn on or off	Press VTR (POWER).
To play	Press ►.
To stop	Press ■.
To pause	Press II.
	To resume normal playback, press again.
To search the picture forward or backward	Keep pressing ►► or ◄◄ during playback. To resume normal playback, release the button.
To search the chapter forward and backward	Press CH +/-.

### Note

- If the video equipment does not have a certain function, the corresponding button on this remote control will not operate.

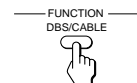
## Operating a cable box or DBS receiver

You can program the supplied remote control to operate a cable box or DBS receiver. Follow the procedures below to set the manufacturer's code number in the remote control.

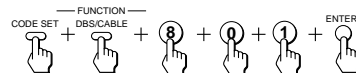


\* The TV/DBS, GUIDE, DISPLAY, +/-, and MENU buttons can be used only with a DBS receiver.

### 1 Turn off the equipment you want to set up, and press DBS/CABLE (FUNCTION).



### 2 Press the CODE SET, DBS/CABLE (FUNCTION), and 0 - 9 buttons to enter the manufacturer's code number (see the chart on the right column), then press ENTER. For example, to program your remote control to operate a Sony DBS receiver, press CODE SET, DBS/CABLE (FUNCTION), 8, 0, 1, and ENTER.



### 3 Press DBS/CABLE (POWER) to turn on the cable box or DBS receiver.



### 4 Use the cable box/DBS control buttons to check if the code number works.

For example, to operate a cable box or DBS receiver, you can use the DBS/CABLE (POWER), JUMP, CH +/-, 0 - 9 and ENTER buttons.

### Note

- If the cable box or DBS receiver does not have a certain function, the corresponding button on this remote control will not operate.

### To operate the projection TV

Press TV (FUNCTION). Then use the projection TV control buttons to control the projection TV.

### For more details on operating the cable box or DBS receiver

Refer to the operating instructions that come with the equipment.

EN

### If the remote control doesn't work

- First, try repeating the setup procedures using the other codes listed for your equipment.

## Manufacturer code numbers (cable box)

Manufacturer	Code number
Hamlin/Regal	222, 223, 224, 225, 226
Jerrold/G. I.	201, 202, 203, 204, 205, 206, 207, 208, 218
Oak	227, 228, 229
Panasonic	219, 220, 221
Pioneer	214, 215
Scientific Atlanta	209, 210, 211
Tocom	216, 217
Zenith	212, 213

## Manufacturer code numbers (DBS receiver)

Manufacturer	Code number
Sony	801 (preset code for the supplied remote control)
RCA	802

### Notes

- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some rare cases, your equipment may use a code that is not provided with this remote control and you may not be able to operate your equipment with the supplied remote control. In this case, use the equipment's own remote control unit.
- Whenever you remove the batteries — to replace them, for example — if too much time is taken, the code numbers may revert to the factory setting and must be reset.

## Troubleshooting

If the problem persists after trying the methods below, contact your nearest Sony dealer.

### No picture (screen not lit), no sound

- ➔ Make sure the power cord is connected securely.
- ➔ Operate with the buttons on the projection TV.
- ➔ Insert the batteries in the remote control with the correct polarity.
- ➔ Replace the batteries with new ones if they are weak.
- ➔ Check to see if the TV/VIDEO setting is correct: when watching TV, set to TV, and when watching video tapes, set to VIDEO1, 2, or 3.
- ➔ Try another channel. It could be station trouble.
- ➔ Perform AUTO SET UP again using the SETUP button to return to the factory preset condition. (page 14)

### Poor or no picture (screen lit), good sound

- ➔ Adjust PICTURE in the VIDEO menu. (page 23)
- ➔ Adjust BRIGHTNESS in the VIDEO menu. (page 23)
- ➔ Adjust convergence. (page 16)
- ➔ Check antenna/cable connections. (page 6)
- ➔ Perform AUTO SET UP again using the SETUP button to return to the factory preset condition. (page 14)
- ➔ Remove objects from the front of the projection TV.

### Good picture, no sound

- ➔ Press MUTE so that "MUTING" disappears from the screen. (page 19)
- ➔ Check the MTS setting in the AUDIO menu. (page 27)
- ➔ Make sure SPEAKER is set to ON in the AUDIO menu. (page 27)
- ➔ Perform AUTO SET UP again using the SETUP button to return to the factory preset condition. (page 14)

### No color

- ➔ Adjust the COLOR in the VIDEO menu. (page 23)
- ➔ Confirm that black and white program is not being broadcast.
- ➔ Perform AUTO SET UP again using the SETUP button to return to the factory preset condition. (page 14)

### Only snow and noise appear on the screen

- ➔ Check the CABLE setting in the SET UP menu. (page 17)
- ➔ Check the antenna/cable connections. (page 6)
- ➔ Make sure the channel is broadcasting programs.
- ➔ Press ANT to change the input mode. (page 20)

### Dotted lines or stripes

- ➔ Adjust the antenna.
- ➔ Move the projection TV away from noise sources such as cars, neon signs, and hair-dryers.

### Double images or ghosts

- ➔ Use a highly directional outdoor antenna or a cable (when the problem is caused by reflections from nearby mountains or tall buildings).

### Cannot operate menu

- ➔ If the item you want to choose appears in gray, you cannot select it. Press TV/VIDEO correctly.
- ➔ Check the CABLE setting in the SET UP menu. (page 17)

### Cannot receive upper channels (UHF) when using an antenna

- ➔ Make sure CABLE is OFF in the SET UP menu. (page 17)
- ➔ Use AUTO PROGRAM to add receivable channels that are not presently in projection TV memory. (pages 14, 18)

### Cannot receive any channels when using cable TV

- ➔ Make sure CABLE is ON in the SET UP menu. (page 17)
- ➔ Use AUTO PROGRAM to add receivable channels that are not presently in projection TV memory. (pages 14, 18)

### Remote control does not operate

- ➔ Batteries could be weak. Replace the batteries. (page 13)
- ➔ Make sure the projection TV's power cord is connected securely to the wall outlet.
- ➔ Press TV (FUNCTION) when operating your projection TV.
- ➔ Are fluorescent lights too close to the projection TV? Move them at least 3-4 feet away from the projection TV.

### Cannot gain enough volume when using a cable box

- ➔ Increase the volume at the cable box. Then press TV (FUNCTION) and adjust the projection TV's volume.

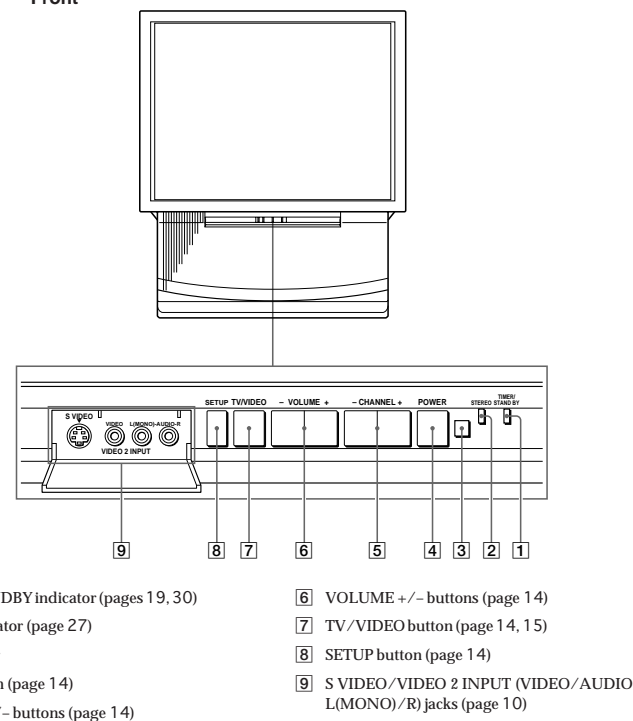
### The projection TV needs to be cleaned

- ➔ Clean the projection TV with a soft dry cloth. Never use strong solvents such as thinner or benzene, which might damage the finish of the cabinet.

## Index to parts and controls

This section briefly describes the buttons and controls on the projection TV and on the Remote control. For more information, refer to the pages next to each description.

### Projection TV — Front



1 TIMER/STANDBY indicator (pages 19, 30)

2 STEREO indicator (page 27)

3 Remote sensor

4 POWER switch (page 14)

5 CHANNEL +/— buttons (page 14)

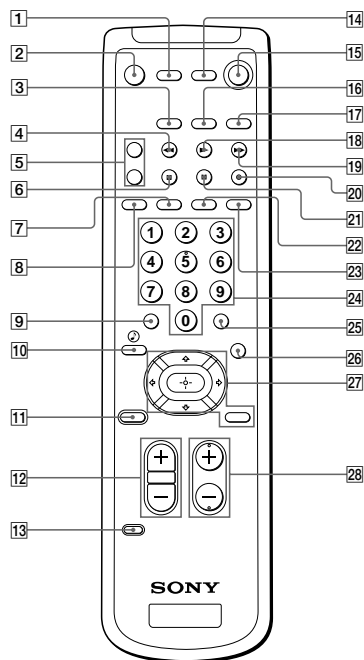
6 VOLUME +/— buttons (page 14)

7 TV/VIDEO button (page 14, 15)

8 SETUP button (page 14)

9 S VIDEO / VIDEO 2 INPUT (VIDEO/AUDIO L(MONO)/R) jacks (page 10)

## Remote control

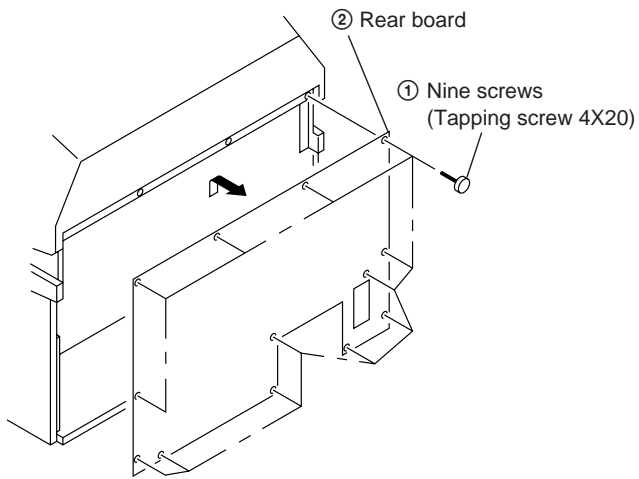


EN

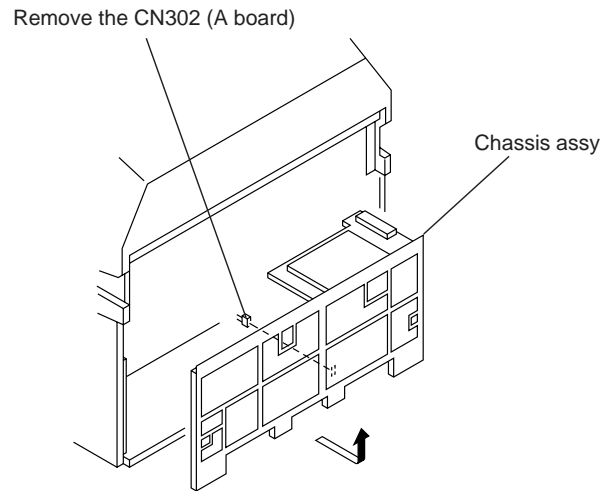
- |                                                            |                                                       |
|------------------------------------------------------------|-------------------------------------------------------|
| 1 VTR (POWER) switch (page 36)                             | 17 TV (FUNCTION) button (pages 15, 19)                |
| 2 Muting button (page 19)                                  | 18 SWAP button (page 22)                              |
| 3 VTR (FUNCTION) button (page 35)                          | 19 PIP button (page 21)                               |
| 4 FREEZE button (page 22)                                  | 20 TV/VIDEO button (yellow labelled button) (page 21) |
| 5 TV/VTR CH +/- buttons (Yellow labelled button) (page 21) | 21 AUDIO button (page 21)                             |
| 6 POSITION button (page 22)                                | 22 TV/VIDEO button (page 20)                          |
| 7 DISPLAY button (page 20)                                 | 23 ANT button (page 20)                               |
| 8 SLEEP button (page 20)                                   | 24 0 - 9 buttons (page 16)                            |
| 9 JUMP button (page 19)                                    | 25 ENTER button (page 16)                             |
| 10 TV/DBS button (page 26, 37)                             | 26 MTS/GUIDE button (page 27, 37)                     |
| 11 RESET button (page 23)                                  | 27 Menu operation buttons (page 15)                   |
| 12 VOL (volume) +/- buttons (page 19)                      | MENU button                                           |
| 13 CODE SET button (page 35)                               | ▲/◆/▼/◆/ buttons                                      |
| 14 DBS/CABLE (POWER) switch (page 37)                      | ⏏ button                                              |
| 15 TV (POWER) switch (page 19)                             | 28 CH (channel) +/- buttons (pages 16, 19)            |
| 16 DBS/CABLE (FUNCTION) button (page 37)                   |                                                       |

## SECTION 2 DISASSEMBLY

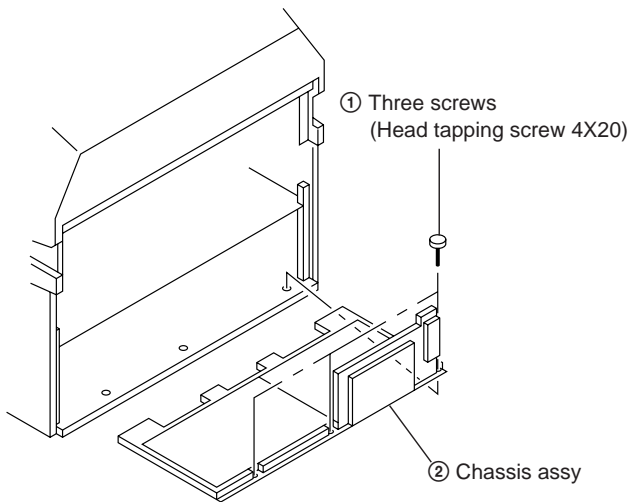
### 2-1. REAR BOARD REMOVAL



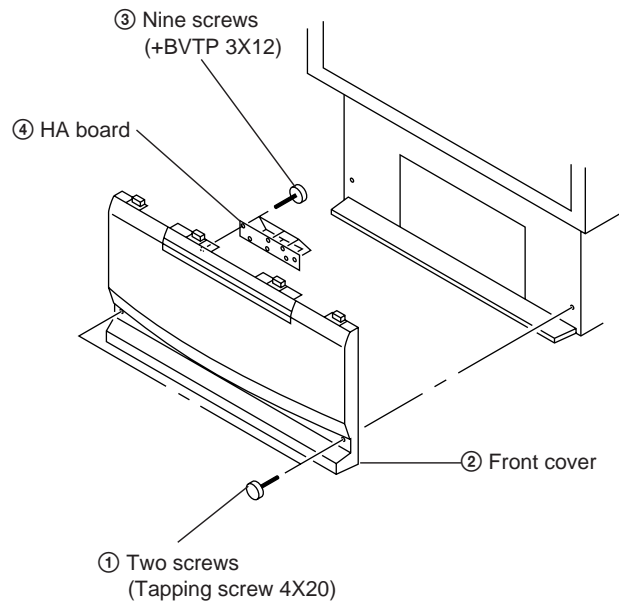
### 2-3. SERVICE POSITION



### 2-2. CHASSIS ASSY REMOVAL

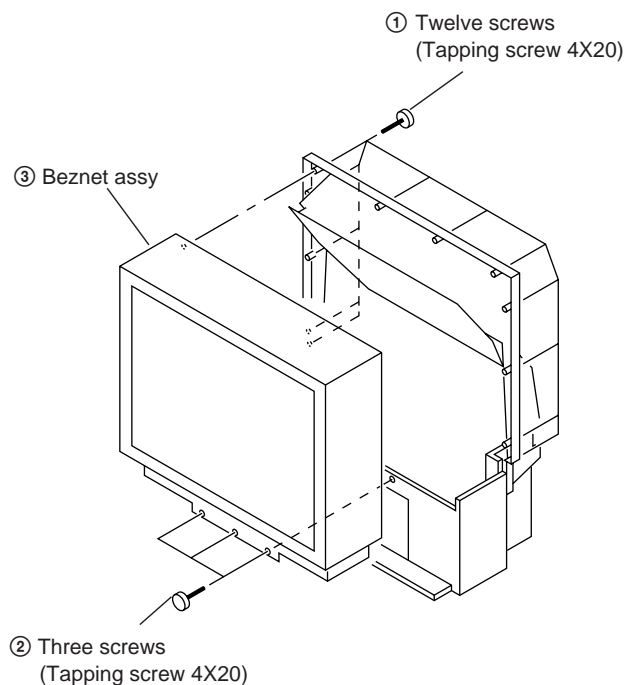


### 2-4. HA BOARD REMOVAL

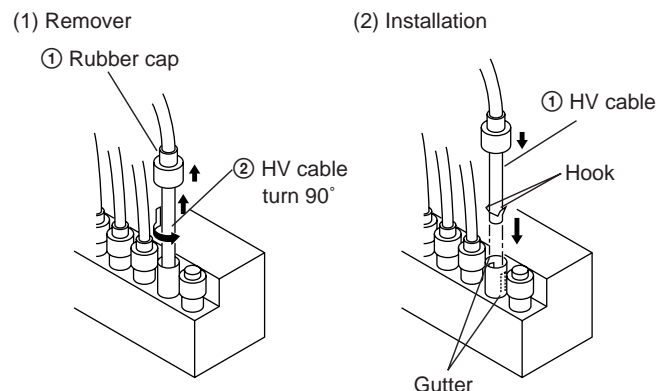




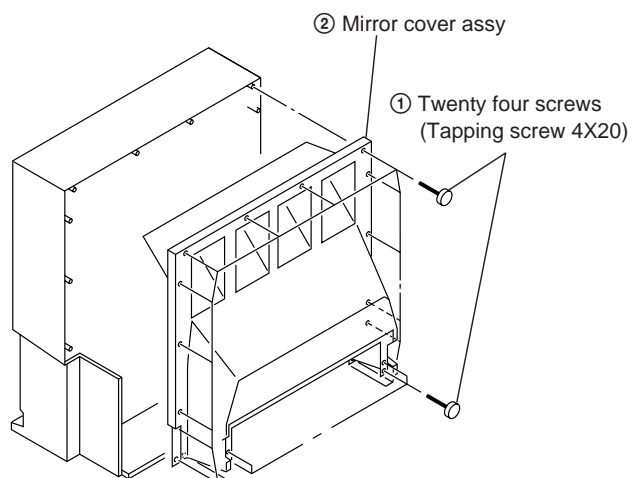
## 2-5. BEZNET ASSY REMOVAL



## 2-7. HIGH-VOLTAGE CABLE INSTALLATION AND REMOVAL

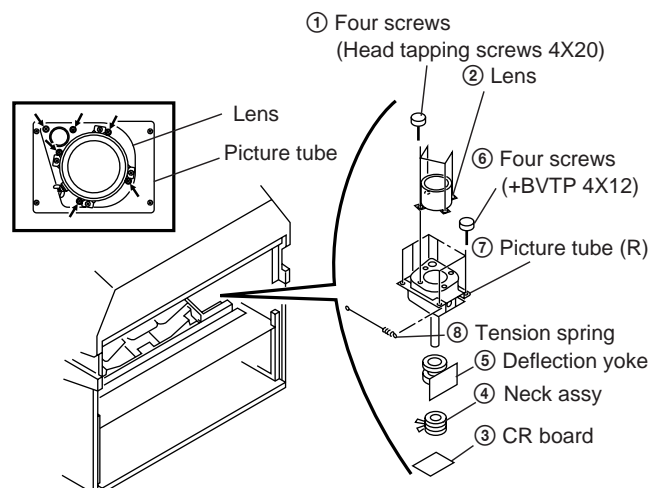


## 2-6. MIRROR COVER ASSY REMOVAL

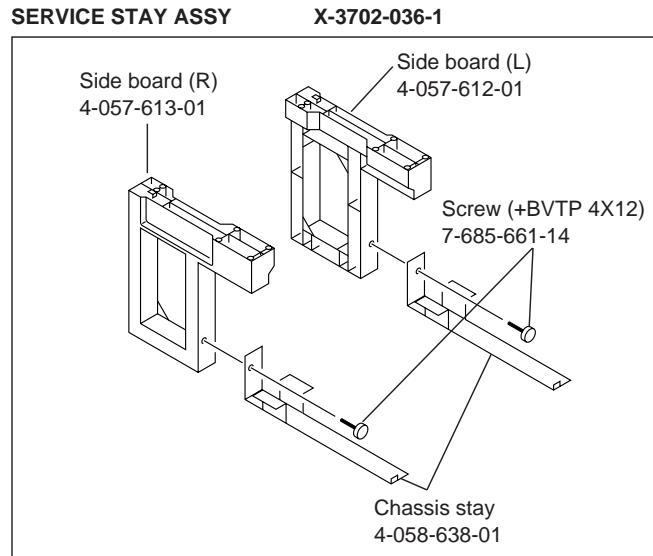


## 2-8. PICTURE TUBE REMOVAL

**CAUTION:** Removing the arrow-marked screws is strictly inhibited.  
If removed, it may cause liquid spill.

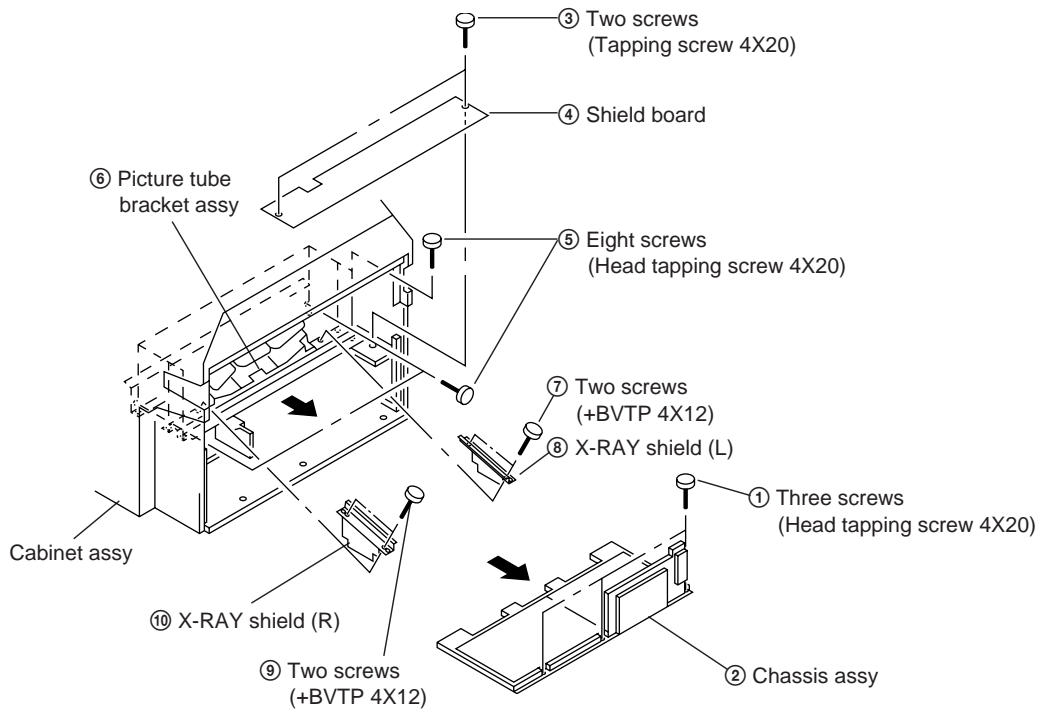


## 2-9. SERVICE STAY ASSY HOW TO USE AND CARRY BACK SERVICE STAY ASSY.



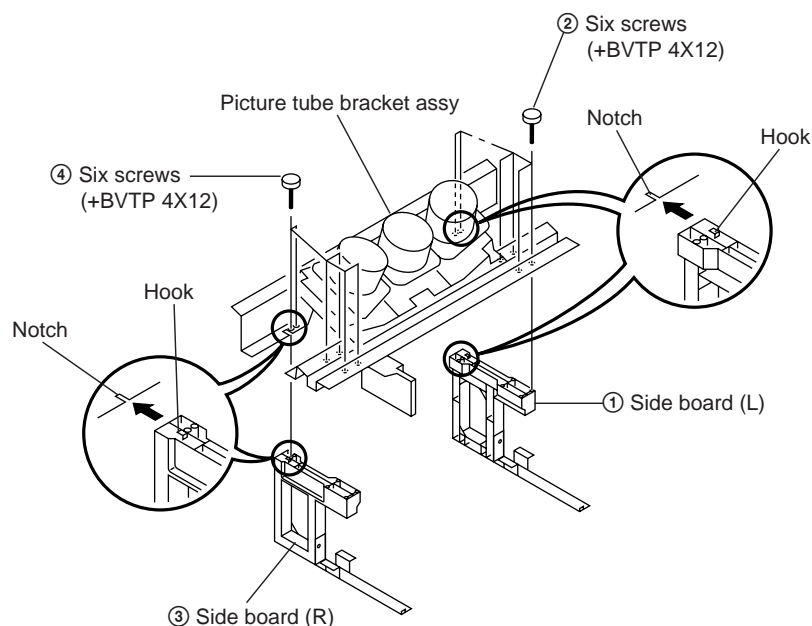
### (1) PICTURE TUBE BRACKET ASSY REMOVAL

- Disassemble HA board and speaker cord.
- Disassemble all the harness from purse lock.



- 1) Remove ① three screws (head tapping screw 4X20) and pull out ② chassis assy from cabinet assy.
- 2) Remove ③ two screws (tapping screw 4X20) and remove ④ shield board.
- 3) Remove ⑤ eight screws (head tapping screw 4X20) and release ⑥ picture tube bracket assy from cabinet assy.
- 4) Remove ⑦ two screws (+BVTP 4X12) and remove ⑧ X-RAY shield (L).
- 5) Remove ⑨ two screws (+BVTP 4X12) and remove ⑩ X-RAY shield (R).

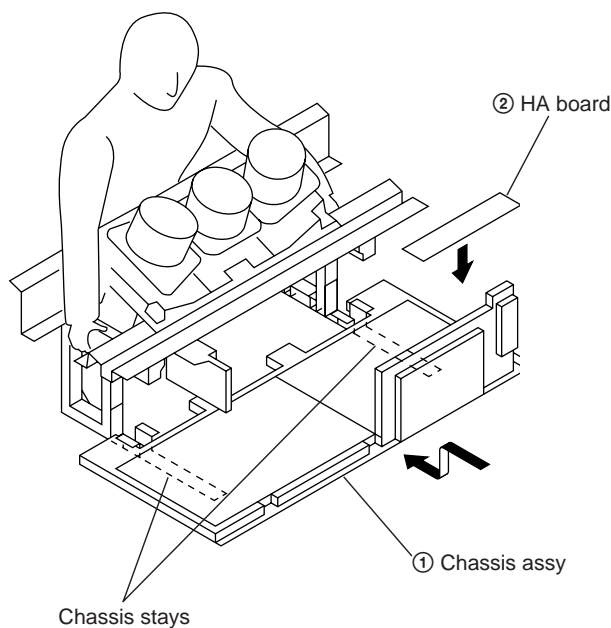
## (2) SETTING OF SERVICE STAY ASSY.



- 1) Remove CR board from picture tube.
- 2) Lift up picture tube bracket assy and fit the hook of ① side board (L) to the notch on the assy. Then fix then with ② six screws (+BVTP 4X12).
- 3) Lift up picture tube bracket assy and fit the hook of ③ side board (R) to the notch on the assy. Then fix then with ④ six screws (+BVTP 4X12).

**Note :** Always be sure to remove the picture tube before trying to set the sideboards (R L).  
The CR board may be damaged if left in position while setting the sideboards and it may be impossible to set the sideboards correctly.

## (3) INSTALL A CHASSIS ASSY AND CARRY THE PICTURE TUBE BRACKET



- 1) Put ① chassis assy on chassis stays.
- 2) Put ② HA board on ① chassis assy
- 3) Put your hands to side board (L) and (R).
- 4) You can carry the chassis assy in this condition.

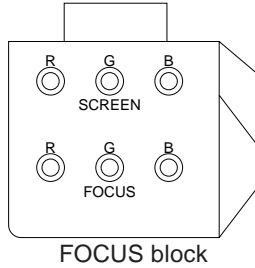
**Note :** Make sure that the CR board has been removed before installing the chassis assy.

## SECTION 3

### SET-UP ADJUSTMENTS

#### 3-1. SCREEN VOLTAGE ADJUSTMENT (ROUGH ALIGNMENT)

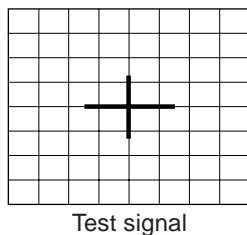
1. Receive the Monoscope signal.
2. Set 50% BRIGHTNESS and minimum PICTURE.
3. Turn the red VR on the FOCUS block all the way to the left and then gradually turn it to the right until the point where you can see the retrace line.
4. Next gradually turn it to the left to the position where the retrace line disappears.



**Fig. 3-1**

#### 3-2. FOCUS LENS ADJUSTMENT

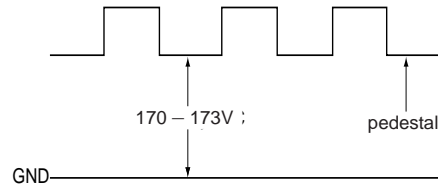
1. Loose the lens screw.
2. Set in service mode.
3. Use VP on the service mode menu to shown only the green color.
4. Press the Commander Menu button and select FEATURES and CONVERGENCE to display the test signal (crosshatch) on the screen.
5. Rotate the green lens and align with the optimal focus point from the test signal.
6. Use RG-RH from the service mode menu to set to green and red.
7. Output the test signal and rotate the red lens to obtain the optimum focus at the point where the red and green spots overlap.
8. Use RG-BH from the service mode menu to set to red and blue.
9. Output the test signal and rotate the blue lens to obtain the optimum focus at the point where the blue and red spots overlap.
10. Tighten the lens screw.



**Fig. 3-2**

#### 3-3. SCREEN (G2) ADJUSTMENT

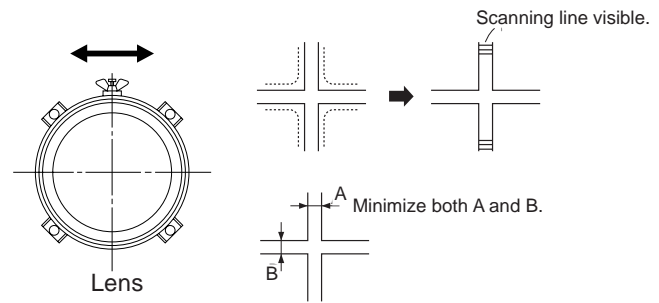
1. Select VIDEO mode without signals.
2. Connect an oscilloscope to the TP701(KR), TP731(KG) and TP761(KB) of CR board, CG board and CB board.
3. Adjust R, G and B screen voltage to 170 – 173V with screen VR on the focusblock.
4. After adjusting the screen VR on the focus block confirm that the retrace lines are not visible. If retrace lines are visible reduce the setting of the screen VR until the retrace lines are not visible.



**Fig. 3-3**

#### 3-4. FOCUS VR ADJUSTMENT

1. Set in service mode.
2. Use VP on the service mode menu to shown only the green color.
3. Press the Commander Menu button (convergence) and output the test signal (crosshatch).
4. Rotate the green VR on the FOCUS block and align to obtain the optimal focus point.
5. Use RG-RH from the service mode menu to set to green and red.
6. Output the test signal and rotate the red VR to obtain the optimum focus at the point where the red and green spots overlap.
7. Use RG-BH from the service mode menu to set to red and blue.
8. Output the test signal and rotate the blue VR aligning to obtain the optimum focus at the point where the blue and green spots overlap.



**Fig. 3-4**

**Fig. 3-5**

### 3-5. DEFLECTION YOKE TILT ADJUSTMENT

1. Set to receive the Monoscope signal.
2. Set in service mode.
3. Use VP on the service mode menu to show only the green color.
4. Loosen the deflection yoke set screw and align the tilt of the Deflection Yoke so that the bars at the center of the monoscope pattern are horizontal.
5. After aligning the deflection yoke, fasten it securely to the funnel-shaped portion (neck) of the CRT.
6. The tilt of the deflection yoke for red is aligned with RG-RH on the service mode menu, and the tilt on the deflection yoke for blue is aligned with RG-BH on the service menu, is aligned the same as was done for green.

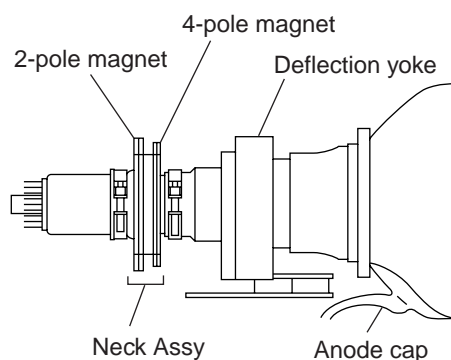


Fig. 3-6

### 3-6. 2-POLE MAGNET ADJUSTMENT

1. Disconnect CN1431 on Z board.
2. Power on.
3. Set to receive dot hatch signal.
4. Place caps on the red and blue lenses so that only the green color is shown.
5. Turn the green VR on the focus block to the left and set to underfocus to enlarge the spot.
6. Adjust the 2-pole magnet so that the spot is centered inside of the flare portion and the width of the flare on the left side and right side is equal.
7. Turn the green VR on the focus block to the right and adjust for best focus.
8. Perform the same adjustment for red.
9. Power off
10. Connect CN1431.

Use the center dot

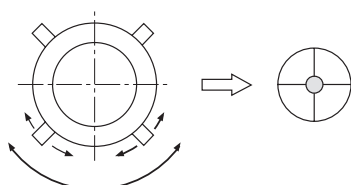


Fig. 3-7

### 3-7. 4-POLE MAGNET ADJUSTMENT

1. Disconnect CN1431 on Z board.
2. Power on.
3. Set to receive the dot signal.
4. Place caps on the red and blue lenses so that only the green color is shown.
5. Turn the green VR on the focus block to the right and set to overfocus to enlarge the spot.
6. Adjust the 4-pole magnet so that the spot becomes a perfect circle.
7. Turn the green VR on the focus block to the left and adjust for best focus.
8. Perform the same adjustment for red and blue. For red adjust the spot to a circle. For blue adjust the spot so that the spot height is 1.5 times higher than the spot width ( $x : y = 1 : 1.5$ ).
9. Power off
10. Connect CN1431.

Use the center dot

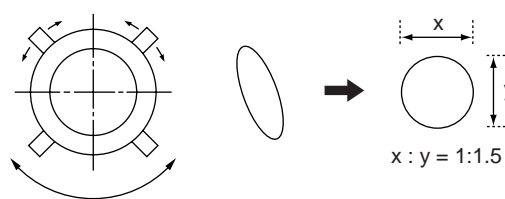


Fig. 3-8

### 3-8. DEFOCUS ADJUSTMENT (Blue)

1. Receive the dot hatch signal
2. Adjust the blue FOCUS knob clockwise until the right dot becomes oval.
3. Check flare with high luminance dot hatch signal to make sure that the blue flare is minimal. Reduce defocus if blue flare is excessive.
4. Defocus adjustment is for blue only.

[Focus adjustment point]

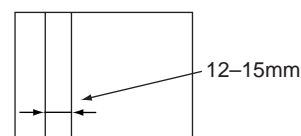


Fig. 3-9

### 3-9. ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER



By using Remote Commander (RM-Y136A),all circuit adjustments can be made.

#### NOTE : Test Equipment Required.

1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio oscillator

#### 1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

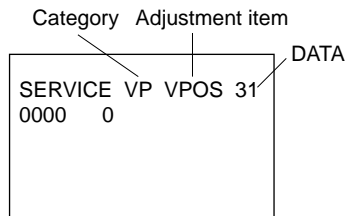
##### SERVICE MODE PROCEDURE

1. Standby mode. (Power off)
2. **DISPLAY** → **5** → **VOL (+)** → **TV POWER**  
( **+** → **5** →  →  )

on the Remote Commander.

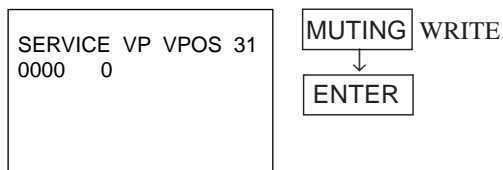
(Press each button within a second.)

#### SERVICE MODE ADJUSTMENT



3. The CRT displays the item being adjusted.
4. Press **1** or **4** on the Remote Commander to select the item.
5. Press **3** or **6** on the Remote Commander to change the data.
6. Press **2** or **5** on the Remote Commander to select the category.
7. If you want to recover the latest values press **0** then **ENTER** to read the memory.
8. Press **MUTING** then **ENTER** to write into memory.

#### SERVICE MODE ADJUSTMENT

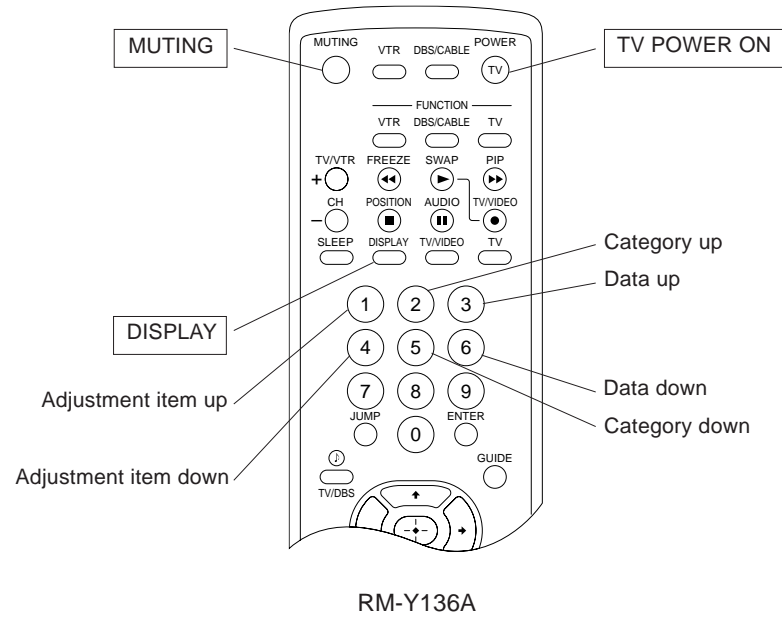


9. Press **8** then **ENTER** on the Remote Commander to initialize or turn set off and on to exit.

#### 2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, remove the plug from AC outlet, and then replace the plug in AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again and confirm they were adjusted.

3. ADJUST BUTTONS AND INDICATOR



4. SERVICE MODE LIST

VP				
Category	Adjustment item	Standard data	Data range	Note
VP	VPOS	-	0-63	V SHIFT
	VSIZ	-	0-63	V SIZE
	VCOM	0	0-3	HV-COMP-V
	VLIN	7	0-15	V LIN
	VSCO	7	0-15	S CORRECTION
	HPOS	7	0-15	H SHIFT
	HSIZ	-	0-63	H SIZE
	PAMP	-	0-63	PIN AMP
	UPIN	7	0-15	UPPER CORNER PIN
	LPIN	7	0-15	LOWER CORNER PIN
	PPHA	7	0-15	H TRAPEZOID
	AFC	2	0-3	AFC LOOP GAIN
	VBOW	7	0-15	V BOW
	VANG	7	0-15	V ANGLE
	REF	3	0-3	AKB REFERENCE
	GDRV	-	0-63	GREEN DRIVE
	BDRV	-	0-63	BLUE DRIVE
	GCUT	-	0-15	GREEN CUT OFF
	BCUT	-	0-15	BLUE CUT OFF
	SCON	-	0-15	SUB CONTRAST
	SHUE	-	0-15	SUB HUE
	SCOL	-	0-15	SUB COLOR
	SBRT	-	0-63	SUB BRIGHTNESS
	SSHP	7	0-15	SUB SHARPNESS
	GMMA	0	0-3	GAMMA LEVEL
	CDM2	0	0,1	COUNT DOWN MODE 2
	DPIX	1	0,1	DYNAMIC PICTURE
	Y-DC	1	0,1	DC TRANSMISSION RATIO
	ABLM	1	0,1	ABL MODE
	AXIS	0	0,1	R-Y, G-Y AXIS
	NOTC	0	0,1	C TRAP
	CROM	7	0-15	C TRAP F0
	TOT	0	0,1	C TOT FILTER
	PREL	3	0-3	PRE/OVER LEVEL
	SHPF	2	0-3	SHARPNESS F0
	RON	-	0,1	RED ON/OFF
	GON	-	0,1	GREEN ON/OFF
	BON	-	0,1	BLUE ON/OFF
	DCOL	-	0,1	DYNAMIC COLOR
	CDMD	0	0,1	V COUNT DOWN
	LBLK	13	0-15	H BLK WIDTH LEFT SIDE
	RBLK	13	0-15	H BLK WIDTH RIGHT SIDE

## AP

Category	Adjustment item	Standard data		Data range	Note
		4IT	V		
AP	SVOL	0	0	0-15	SUB VOLUME
	SBAL	7	7	0-15	SUB BLANCE
	SBAS	9	7	0-15	SUB BASS
	STRE	6	7	0-15	SUB TREBLE

## RG

Category	Adjustment item	Standard data	Data range	Note
RG-GH	GH CENT	-	-127-+127	GREEN H SENT
	GH SKEW	-	-127-+127	GREEN H SKEW
	GH BOW	-	-127-+127	GREEN H BOW
	GH 4BOW	-	-127-+127	GREEN H 4TH BOW
	GH SIZE	-	-127-+127	GREEN H SIZE
	GH LIN	-	-127-+127	GREEN H LINEARITY
	GH MSIZ	-	-127-+127	GREEN H MID SIZE
	GH MLIN	-	-127-+127	GREEN H MID LINEARITY
	GH KEY	-	-127-+127	GREEN H KEY
	GH SSKW	-	-127-+127	GREEN H SUB SKEW
	GH MPIN	-	-127-+127	GREEN H MID PIN
	GH PIN	-	-127-+127	GREEN H PIN
	GH SBOW	-	-127-+127	GREEN H SUB BOW
	GH MBOW	-	-127-+127	GREEN H MID BOW
	GH 4PIN	-	-127-+127	GREEN H 4TH PIN
	GH 4SBO	-	-127-+127	GREEN H 4TH SUB BOW
RG-GV	GV CENT	-	-127-+127	GREEN V CENT
	GV SKEW	-	-127-+127	GREEN V SKEW
	GV BOW	-	-127-+127	GREEN V BOW
	GV SIZE	-	-127-+127	GREEN V SIZE
	GV LIN	-	-127-+127	GREEN V LINEARITY
	GV MSIZ	-	-127-+127	GREEN V MID SIZE
	GV MKEY	-	-127-+127	GREEN V MID KEY
	GV KEY	-	-127-+127	GREEN V KEY
	GV SSKW	-	-127-+127	GREEN V SUB SKEW
	GV MPIN	-	-127-+127	GREEN V MID PIN
	GV PIN	-	-127-+127	GREEN V PIN
	GV SBOW	-	-127-+127	GREEN V SUB BOW
	GV WAVE	-	-127-+127	GREEN V WAVE
	GV 4PIN	-	-127-+127	GREEN V 4TH PIN
RG-RH	RH CENT	-	-95-+96	RED H CENT
	RH SKEW	-	-127-+127	RED H SKEW
	RH BOW	-	-127-+127	RED H BOW

Category	Adjustment item	Standard data	Data range	Note
	RH 4BOW	-	-127-+127	RED H 4TH BOW
	RH SIZE	-	-127-+127	RED H SIZE
	RH LIN	-	-127-+127	RED H LINEARITY
	RH MSIZ	-	-127-+127	RED H MID SIZE
	RH MLIN	-	-127-+127	RED H MID LINEARITY
	RH KEY	-	-127-+127	RED H KEY
	RH SSKW	-	-127-+127	RED H SUB SKEW
	RH MPIN	-	-127-+127	RED H MID PIN
	RH PIN	-	-127-+127	RED H PIN
	RH SBOW	-	-127-+127	RED H SUB BOW
	RH MBOW	-	-127-+127	RED H MID BOW
	RH 4PIN	-	-127-+127	RED H 4TH PIN
	RH 4SBO	-	-127-+127	RED H 4TH SUB BOW
RG-RV	RV CENT	-	-95-+96	RED V CEVT
	RV SKEW	-	-127-+127	RED V SKEW
	RV BOW	-	-127-+127	RED V BOW
	RV SIZE	-	-127-+127	RED V SIZE
	RV LIN	-	-127-+127	RED V LINEARITY
	RV MSIZ	-	-127-+127	RED V MID SIZE
	RV MKEY	-	-127-+127	RED V MID KEY
	RV KEY	-	-127-+127	RED V KEY
	RV SSKW	-	-127-+127	RED V SUB SKEW
	RV MPIN	-	-127-+127	RED V MID PIN
	RV PIN	-	-127-+127	RED V PIN
	RV SBOW	-	-127-+127	RED V SUB BOW
	RV WAVE	-	-127-+127	RED V WAVE
	RV 4PIN	-	-127-+127	RED V 4TH PIN
	RV WING	-	-31-+32	RED V WING
RG-BH	BH CENT	-	-95-+96	BLUE H CENT
	BH SKEW	-	-127-+127	BLUE H SKEW
	BH BOW	-	-127-+127	BLUE H BOW
	BH 4BOW	-	-127-+127	BLUE H 4TH BOW
	BH SIZE	-	-127-+127	BLUE H SIZE
	BH LIN	-	-127-+127	BLUE H LINEARITY
	BH MSIZ	-	-127-+127	BLUE H MID SIZE
	BH MLIN	-	-127-+127	BLUE H MID LINEARITY
	BH KEY	-	-127-+127	BLUE H KEY
	BH SSKW	-	-127-+127	BLUE H SUB SKEW
	BH MPIN	-	-127-+127	BLUE H MID PIN
	BH PIN	-	-127-+127	BLUE H PIN
	BH SBOW	-	-127-+127	BLUE H SUB BOW
	BH MBOW	-	-127-+127	BLUE H MID BOW



Category	Adjustment item	Standard data	Data range	Note
	BH 4PIN	-	-127--+127	BLUE H 4TH PIN
	BH 4SBO	-	-127--+127	BLUE H 4TH SUB BOW
RG-BV	BV CENT	-	-95--+96	BLUE V CENT
	BV SKEW	-	-127--+127	BLUE V SKEW
	BV BOW	-	-127--+127	BLUE V BOW
	BV SIZE	-	-127--+127	BLUE V SIZE
	BV LIN	-	-127--+127	BLUE V LINEARITY
	BV MSIZ	-	-127--+127	BLUE V MID SIZE
	BV MKEY	-	-127--+127	BLUE V MID KEY
	BV KEY	-	-127--+127	BLUE V KEY
	BV SSKW	-	-127--+127	BLUE V SUB SKEW
	BV MPIN	-	-127--+127	BLUE V MID PIN
	BV PIN	-	-127--+127	BLUE V PIN
	BV SBOW	-	-127--+127	BLUE V SUB BOW
	BV WAVE	-	-127--+127	BLUE V WAVE
	BV 4PIN	-	-127--+127	BLUE V 4TH PIN
	BV WING	-	-31--+32	BLUE V WING

**CC**

Category	Adjustment item	Standard data	Data range	Note
CC	CRIH	9	0-15	CRI COUNT HIGH
	CRIL	2	0-15	CRI COUNT LOW
	CFLD	5	0-15	FIXED FIELD COUNT
	CCDI	3	0-7	NO CCD INT COMPARE
	CRIP	4	0-7	CRI & PARITY ERROR
	CRIT	2	0-3	CRI TIME CONSTANT
	CSB1	3	0-3	SYNC SLICE BIAS 1
	CSB2	4	0-7	SYNC SLICE BIAS 2
	CCBD	4	0-15	C SYNC BACKPORCH DET
	CCFD	7	0-15	C SYNC FRONTPORCH DET
	CREP	142	0-255	CRI SIGNAL END POSITION
	CSEP	186	0-255	START BIT END POSITION
	CRBD	8	0-15	CRI BACKPORCH DET
	CRFD	9	0-15	CRI FRONTPORCH DET
	CSSD	3	0-15	STROBE WINDOW ST DLY
	CSED	9	0-15	STROBE WINDOW ED DLY
	CSBS	12	0-31	START BIT THRESHOLD
	CDSD	8	0-31	DATA START DELAY
	CCDS	9	0-31	CAPTION DT THRESHOLD
	CHMK	42	0-63	H SYNC MASK WIDTH
	CHSY	136	0-255	H SYNC VCO COUNT

**OP**

Category	Adjustment item	Standard data	Data range	Note
OP	DISP	-	0-63	OSD POSITION
	PDPS	-	0-255	FAV/IDX CH POSITION
	PDPO	-	0-7	CH POSITION (OFF SET)

**ID**

Category	Adjustment item	Standard data	Data range	Note
ID	ID0	25	0-255	MODEL ID#0
	ID1	55	0-255	MODEL ID#1
	ID2	31	0-255	MODEL ID#2
	ID3	1	0-255	MODEL ID#3
	ID4	155	0-255	MODEL ID#4
	ID5	177	0-255	MODEL ID#5
	ID6	198	0-255	MODEL ID#6
	ID7	66	0-255	MODEL ID#7

**PS**

Category	Adjustment item	Standard data	Data range	Note
PS	PIPH	-	0-127	PIP H POSITION
	PIPV	-	0-63	PIP V POSITION
	PMVD	26	0-31	PIP V PULSE DELAY(M)
	PIVD	22	0-31	PIP V PULSE DELAY(I)
	PCON	-	0-15	PIP CONTRAST(I)
	FRMY	7	0-15	PIP FRAME Y LEVEL
	IPER	0	0-15	PIP PEDESTAL R-Y(I)
	IPEB	0	0-15	PIP PEDESTAL B-Y(I)
	IHUE	-	0-15	PIP SUB HUE
	ICOL	-	0-15	PIP SUB COLOR
	PHDL	1	0-15	PIP H PULSE DELAY
	PYSD	1	0-15	PIP SELECT DELAY
	PYDL	0	0-7	PIP Y DELAY
	PCPS	0	0,1	PIP CLP
	PCPF	0	0,1	PIP CLP CYCLES
	PSEL	0	0,1	PIP SELDOWN
	PPLL	0	0-3	PIP PLL
	CHRI	0	0,1	PIP INPUT POLARITY
	CHRO	0	0,1	PIP OUTPUT POLARITY

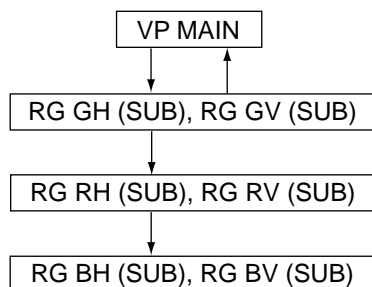
IC

Category	Adjustment item	Standard data	Data range	Note
IC	SSCN	6	0-15	P&P SUB SUB CONTRAST
	SSHU	-	0-15	P&P SUB SUB HUE
	SSCL	-	0-15	P&P SUB SUB COLOR
	SUPD	-	0-15	P&P SUB U OFFSET
	SVPD	-	0-15	P&P SUB V OFFSET
	SDLY	0	0-3	P&P SUB Y DELAY
	SBGR	3	0-3	P&P SUB SCP CONTROL(1)
	SBGF	3	0-3	P&P SUB SCP CONTROL(2)
	PAFC	2	0-3	PIP AFC LOOP GAIN
	PTOT	0	0,1	PIP CHROMA TOT FILTER
	PYDR	10	0-31	PIP Y DRIVE
	PYDC	3	0-7	PIP DC TRAN
	PSHP	1	0,1	PIP SHARPNESS F0
	PDPI	0	0,1	PIP DYNAMIC PICTURE
	PSYS	0	0-3	PIP COLOR SYSTEM
	PXTL	0	0-3	PIP X' TAL
	PLOP	0	0-3	PIP COLOR LOOP

### 3-10. CONVERGENCE ADJUSTMENT

- When replacing the deflection yoke, always perform “DEFLECTION YOKE TILT ADJUSTMENT” before adjusting the convergence.

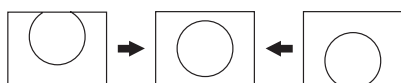
#### Adjustment procedure



#### [ GREEN REGISTRATION ADJUSTMENT ]

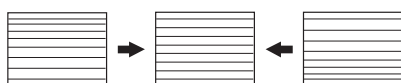
##### • V-SHIFT adjustment

VP VPOS



##### • V-LINEARITY adjustment

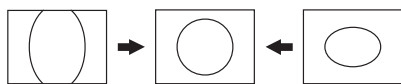
VP VLIN



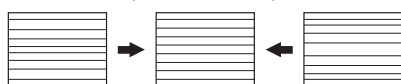
##### • V-SIZE, V-CORRECTION adjustment

While tracking, adjust so that the lattice intervals for VSIZ and VSCO are equal.

VP VSIZ

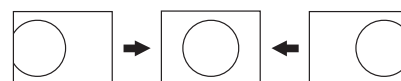


VP VSCO



##### • H-SHIFT adjustment

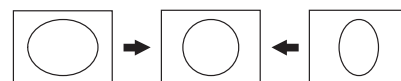
VP HPOS



##### • H-SIZE adjustment

Finely adjust with SUB MSIZ.

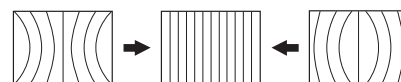
VP HSIZ



##### • PIN-AMP adjustment

Finely adjust with SUB MPIN.

VP PAMP



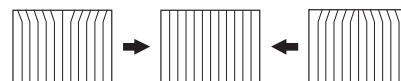
##### • UPPER/LOWER-CORNER PIN adjustment

Correct the screens top and bottom bow line.

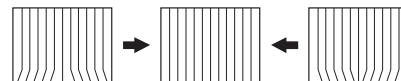
However, if this adjustment is overdone, distortion may occur with the PIN-AMP adjustment that can not be re-adjusted.

Note : The PIN-AMP adjusts the overall screen from top to bottom, but the UPPER/LOWER-CORNER PIN adjustments have large movement in the top and bottom sections, so be careful.

VP UPIN



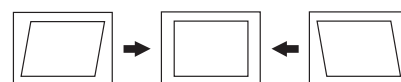
VP LPIN



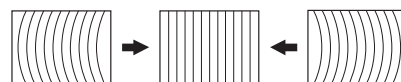
##### • V-ANGLE, V-BOW adjustment

Correct the tilt and bow of the vertical line at the center of the screen.

VP VANG

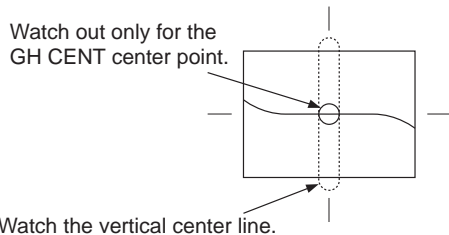


VP VBOW

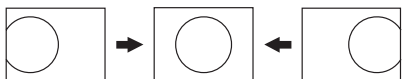


**[GREEN SUB ADJUSTMENT]**  
**SCREEN CENTER SECTION GREEN VERTICAL LINE**  
**ADJUSTMENT**

1. Finely adjust with GH CENT, GH BOW, GH SKEW.  
Adjust by watching out for the GH CENT screen center section.
2. GH 4TH BOW adjustment  
Correct the corner distortion that could not be adjusted away with the GH 4BOW adjustment.



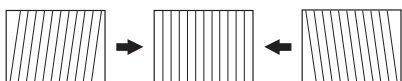
**GH CENT**



**GH BOW**



**GH SKEW**

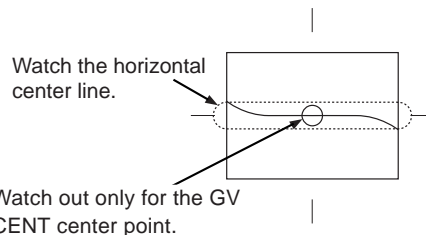


**GH 4BOW**



**SCREEN CENTER SECTION GREEN HORIZONTAL LINE**  
**ADJUSTMENT**

1. Finely adjust the center position of the vertical line at the center of the screen with GV CENT.
2. Correct the tilt and bow of the horizontal line at the center of the screen with GV SKEW and GV BOW.



**GV CENT**



**GV SKEW**

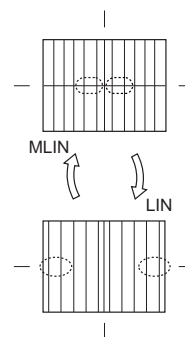


**GV BOW**



**GREEN SIZE AND LINEARITY ADJUSTMENT**

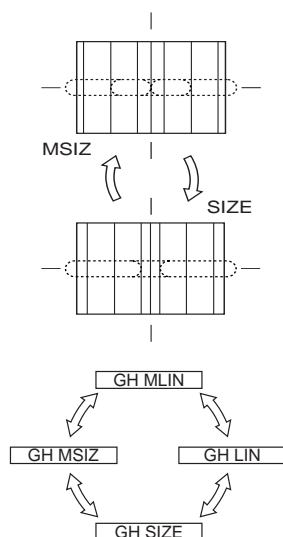
1. Balance the sizes at both sides of the center section of the screen with GH MLIN.
2. Balance the sizes on both end sections of the screen with GH LIN.
3. While tracking, adjust with GH MLIN and GH LIN so that the sizes of the horizontal line at the center of the screen are symmetrical left and right.



### GREEN HORIZONTAL SIZE ADJUSTMENT

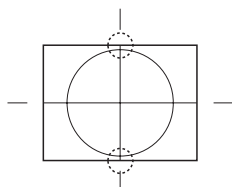
1. Adjust with GH MSIZE so that the sizes of both ends and of both sides of the center section of the screen are equal.
2. Adjust with GH SIZE so that the horizontal sizes of both ends and of both sides of the center section of the screen are equal.
3. While tracking, adjust with GH MSIZ and GH SIZE so that the lattice intervals for the horizontal line section of the center section of the screen are equal and so that the horizontal size is the prescribed value.
4. If M LIN is changed when the GH MSIZ and GH SIZE adjustment is complete, adjust again while tracking.

- With just the H SIZE adjustment in MAIN, if there is no need to adjust GH SIZE in SUB this can save power.



### GREEN VERTICAL LINEARITY ADJUSTMENT

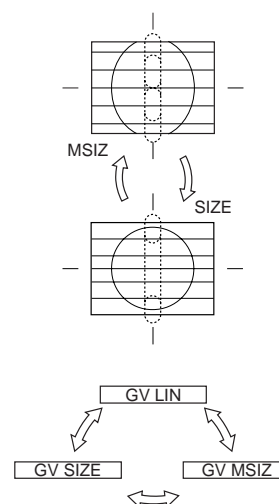
1. Adjust GV LIN so that the vertical lines at the top and bottom of the screen are symmetrical.



### GREEN VERTICAL SIZE ADJUSTMENT

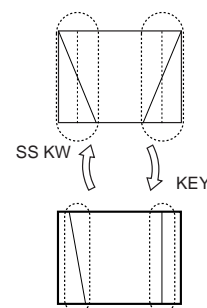
1. Adjust with GV MSIZE so that the sizes for the top and bottom sections of the screen and for both sides of the center section of the screen are equal.
2. Set the vertical size to the prescribed value with GV SIZE.
3. Adjust GV MSIZ and GV SIZE watching the vertical line at the center section of the screen.
4. While tracking, adjust with GV MSIZ and GV SIZE so that the lattice intervals for the vertical line section of the center section of the screen are equal and so that the vertical size is the regulation value.
5. If GV LIN is out of place when the GV MSIZ and GV SIZE adjustment is complete, adjust again while tracking.

- If there is no need to adjust GV SIZE in SUB with just the V SIZE adjustment in MAIN, this can save power.



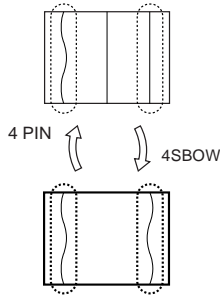
### GREEN HORIZONTAL TRAPEZOIDAL DISTORTION ADJUSTMENT

1. Adjust with GH SSKW so that the tilt of the vertical lines at both ends of the screen is symmetrical left and right.
2. Adjust with GH KEY so that there is no tilt in the vertical lines at both ends of the screen.
3. If there is a tilt on either the left or right after the GH KEY adjustment, adjust while tracking.



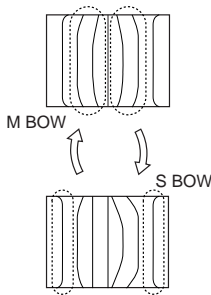
### GREEN HORIZONTAL QUATERNARY ADJUSTMENT

1. Correct the quaternary distortion with GH 4PIN.
2. While balancing, correct the quaternary distortion of both end sections of the screen with GH 4SBOW.
3. While tracking, adjust with GH 4PIN and GH 4SBOW.



### GREEN HORIZONTAL ASYMMETRICAL PIN DISTORTION ADJUSTMENT

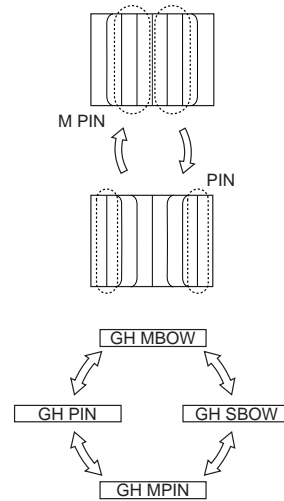
1. Adjust with GH MBOW so that the pin asymmetry at both sides of the center section of screen is symmetrical.
2. Adjust with GH SBOW so that the bow at both end sections of the screen is symmetrical left and right.
3. While tracking, adjust with GH MBOW and GH SBOW so that the bow of vertical lines on the entire screen is symmetrical left and right.



### GREEN HORIZONTAL SYMMETRICAL PIN DISTORTION ADJUSTMENT

1. Adjust the pin distortion at both sides of the center section of the screen with GH MPIN.
2. Adjust the pin distortion at both end sections of the screen with GH PIN.
3. While tracking, adjust with GH MPIN and GH PIN so that the PIN of vertical lines on the entire screen have no bowing.
4. If there is asymmetrical pin distortion after the GH MPIN and GH PIN adjustments, adjust with GH MBOW and GH SBOW while tracking.

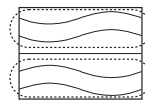
- With just the PIN AMP adjustment in MAIN, if there is no need to adjust GV PIN in SUB, this can save power.



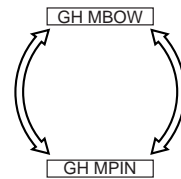
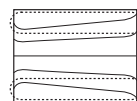
### GREEN VERTICAL WAVE (TERTIARY DISTORTION) ADJUSTMENT

1. Take the screen top and bottom horizontal lines with GV WAVE and find the secondary and quaternary waveform.
2. There is KEY distortion after the GV WAVE adjustment, so adjust with GV WAVE and GV KEY while tracking.

#### GV WAVE



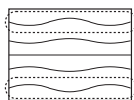
#### GV KEY



### GREEN VERTICAL QUATERNARY DISTORTION ADJUSTMENT

1. Correct the quaternary distortion of the horizontal lines at the top and bottom sections of the screen with GV 4PIN.
- 1) Since there is no 4SBOW for vertical correction, there will be a slight imbalance, but adjust to eliminate the distortion from the horizontal line at either the top or the bottom of the screen.
- 2) In many cases, the horizontal lines at the top and bottom sections of the screen are not straight lines after the adjustment. As long as the secondary distortion is mild enough that it can be corrected with the PIN adjustment, this is OK.

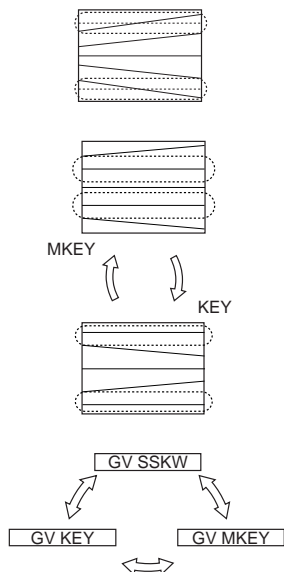
GV 4PIN



### GREEN VERTICAL TRAPEZOIDAL DISTORTION ADJUSTMENT

1. Adjust with GV SSKW so that the tilt of the horizontal lines at the top and bottom sections of the screen is symmetrical about the center position horizontal line.
2. Adjust with GV MKEY so that there is no tilt for the line sections at both sides of the horizontal lines at the center section of the stream.
3. Adjust with GV KEY so that there is no tilt for the horizontal lines at the top and bottom sections of the screen.
4. While tracking, adjust with GV MKEY and GV KEY so that there is no tilt for the horizontal lines on the entire screen.
5. If the tilt is unbalanced after the GV MKEY and GV KEY adjustment, adjust again with GV SSKW.

GV SSKW



### GREEN VERTICAL ASYMMETRICAL PIN DISTORTION (SECONDARY DISTORTION) ADJUSTMENT

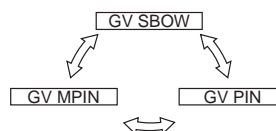
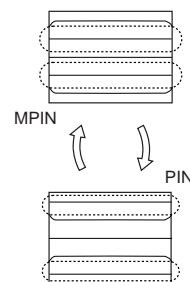
1. Correct the asymmetrical pin distortion at the top and bottom sections of the screen with GV SBOW.

GV SBOW



### GREEN VERTICAL ASYMMETRICAL PIN DISTORTION ADJUSTMENT

1. Adjust the pin distortion for both side sections and the center of the screen with GV MPIN.
2. Adjust with GV PIN so that the horizontal lines at the top and bottom sections of the screen are straight lines.
3. Adjust with GV MPIN and GV PIN so that there is no curve in the horizontal lines on the entire screen.
4. After the adjustments in Items 1-3, adjust the tracking with GV SBOW, GV MPIN, and GV PIN.



### **GREEN AND RED REGISTRATION ADJUSTMENT (RRH, RRV)**

1. Receive a cross-hatch signal.
2. Adjust so that the red lines lay on the green lines.  
Adjust with the same procedure as the GREEN SUB adjustment.

**Notes:** 1. The main correction is not carried out during red registration adjustment.  
2. Beware. The green adjustment items can be changed by mistake.  
3. Unlike for green, adjust within the range -127 ~ +128.

### **GREEN AND BLUE REGISTRATION ADJUSTMENT (RBH, RBV)**

1. Receive a cross-hatch signal.
2. Adjust so that the blue and green lines are on top of each other.

**Notes :** 1. The main correction is not carried out during RED registration adjustment.  
2. Beware. The GREEN and RED adjustment items can be changed by mistake.

### **3-11. AGC ADJUSTMENT**

1. Receive an off-air signal.
2. Adjust the AGC VR ( TU 1001 ) so that there is no snow noise and cross-modulation.

### **3-12. WHITE BALANCE ADJUSTMENT**

1. Receive the monoscope pattern signal and adjust the picture quality with the menu.
2. Adjust service mode SBRT so that the signal 10 IRE section barely glows.
3. Receive the all-white pattern signal.
4. Adjust the white balance with service mode GCUT and BCUT.
5. Adjust service mode SBRT so that the signal 100 IRE section barely glows.
6. Adjust the white balance with service mode GAMP and BAMP.
7. Repeatedly adjust the white balance for the minimum and maximum picture settings.






## SECTION 4

### SAFETY RELATED ADJUSTMENTS

#### [ G BOARD]

#### 4-1. HV REGULATION CIRCUIT CHECK AND ADJUSTMENT

When replacing the following components marked with  on the schematic diagram always check HV regulation, and if necessary re-adjust.

- : C514
- : C514, C515, C516  
IC651  
T502, T503, T504 (FBT)  
D.Y

#### OPERATION CHECK

1. Connect a HV static voltmeter to the unconnected plug of the high-voltage block. (Fig.4-1)
2. Power on the set.
3. Receive the dot signal. (PICTURE and BRIGHTNESS to minimum)
4. Check that the HV static voltmeter is reading  $31.00 \pm 1.0 \text{ kVdc}$ .

#### HV Regulation adjustment

1. Connect a HV static voltmeter to the unconnected plug of the high-voltage block.
2. Power on the set.
3. Receive the dot signal. (PICTURE and BRIGHTNESS to minimum)
4. If anode voltage is 32kV or higher, replace C514 of 390PF/2kV with that of 680PF/2kV, and check if the voltage is within the standard range.
5. If anode voltage is 30kV or lower, replace C514 of 390PF/2kV with that of 100PF/2kV, and check if the voltage is within the standard range. (Fig.4-2)

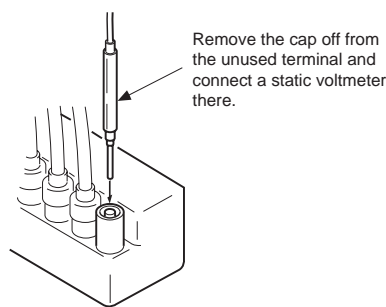


Fig. 4-1

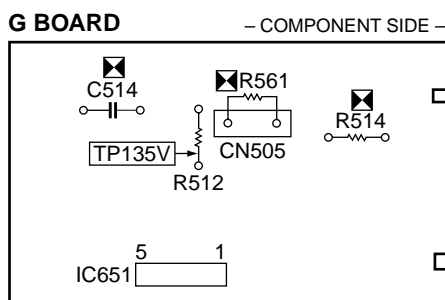





Fig. 4-2

#### 4-2. HV HOLD DOWN CIRCUIT OPERATION CHECK AND ADJUSTMENT

When replacing the following components marked with  on the schematic diagram always check hold-down voltage and if necessary re-adjust.

- : R514, R561
- : C507, C513  
D501, D504, D507  
IC301, IC501, IC651  
R502, R514, R516, R517, R539, R560, R561  
T502, T503, T504 (FBT)  
D.Y

#### OPERATION CHECK

1. Remove CN651 connector.
2. Short-circuit across TP-PROT (R692) and ground.
3. Connect a HV static voltmeter to the unconnected plug of the high-voltage block.
4. Connect a 220k variable resistor, across pin ③ and pin ⑤ of IC651 set to maximum value.
5. Power on the set.
6. Receive the dot signal. (PICTURE and BRIGHTNESS to minimum)
7. Gradually lower the value of the variable resistor and check that the hold-down circuit operates at a static voltmeter reading of  $33.5 \pm 1.0 \text{ kVdc}$  when the raster disappears.

#### HV HOLD-DOWN ADJUSTMENT

1. Repeat steps ① ~ ⑦ as above.
2. If hold down voltage is 34.5kV or higher, remove R514, mount a resistor (390kΩ, 1/4W : RN) onto R561 instead, and check again if the hold-down voltage is within the standard range.
3. If hold down voltage is 32.5kV or lower, mount a resistor (220kΩ, 1/4W : RN) onto R561 and check again if the hold-down voltage is within the standard range. (Fig.4-2)

**NOTE :** Please finish the adjustment as soon as possible

#### 4-3. +B MAX VOLTAGE CONFIRMATION

The following adjustments should always be performed when replacing IC651.

1. Supply 130VAC to with variable autotransformer.
2. Input a dot signal.
3. Set the PICTURE control and the BRIGHTNESS controls to minimum.
4. Confirm the voltage of G BOARD TP135V is less than 137.0Vdc.
5. If step 4 is not satisfied, replace IC651 and repeat above steps. (Fig.4-2)

#### **4-4. +B OVP CONFIRMATION**

1. Remove CN651 connector.
2. Connect a voltmeter to TP135V, and TP (PROT) and ground.
3. Connect a 220k $\Omega$  variable resistor, across pin ③ and pin ⑤ of IC651 set to maximum value.
4. Supply 120VAC to variable autotransformer.
5. Set PICTURE and the BRIGHTNESS controls to minimum.
6. Gradually turn the 220k $\Omega$  variable resistor, and check if OVP works properly when the voltage of TP135V is between 139.0 ~ 151.5V. **(Fig.4-2)**

## SECTION 5

### CIRCUIT ADJUSTMENTS

#### 5-1. RF AGC

1. Input a color-bar signal.
2. Adjust AGC VR of TU1101 so that no snow noise, and crossmodulation disappear from the picture.
3. Verify picture quality on each channel.

#### 5-2. BER DISPLAY ADJUSTMENT (DISP)

1. Receive the cross-hatch signal.
2. Set to Service mode.
3. Select " DISP ", and adjust so that the blank spaces on the both sides of picture bar become equal.
4. Write the data into memory.

MUTING → ENTER

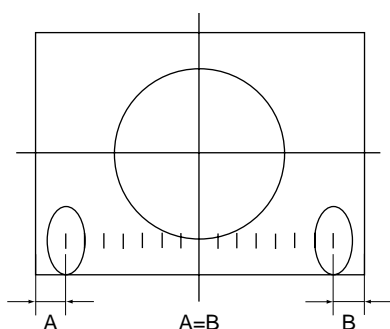


Fig. 5-1

#### 5-3. SUB CONTRAST ADJUSTMENT (SCON)

1. Receive the color-bar signal.
2. PICTURE : maximum  
COLOR : minimum  
BRIGHTNESS : maximum  
RON---1 GON---0 BON---0
3. Set to service mode.
4. Connect an oscilloscope between pin ⑥ of CN004 connector (A board) and ground.
5. Select " SCON ", and adjust so that the wave form level is  $1.65 \pm 0.1V_{p-p}$ .
6. Write the data into memory.

MUTING → ENTER

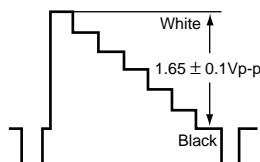


Fig. 5-2

#### 5-4. SUB-HUE AND SUB-COLOR ADJUSTMENT (SHUE, SCOL)

1. Receive the color-bar signal.
2. PICTURE : maximum  
COLOR : minimum  
BRIGHTNESS : minimum
3. Set to service mode.
4. Connect an oscilloscope between pin ⑦ of CN004 connector (A board) and ground.
5. Select " SHUE " and " SCOL ", and adjust them to have  $VB1 = VB4$  and  $VB2 = VB3$  in the wave form levels.
6. Raise SCOL data 1 steps higher.
7. Write the data into memory.

MUTING → ENTER

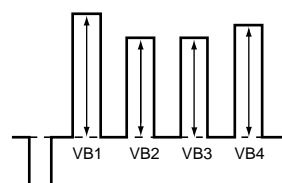


Fig. 5-3

#### 5-5. P IN P POSITION ADJUSTMENT (PIPH, PIPV)

1. Receive the monoscope signal.
2. Set to P IN P mode, and to Service mode.
3. Check the SUB PICTURE position.
4. Select " PIPH " and " PIPV " and adjust H/V position to the center level.
5. Write the data into memory.

MUTING → ENTER

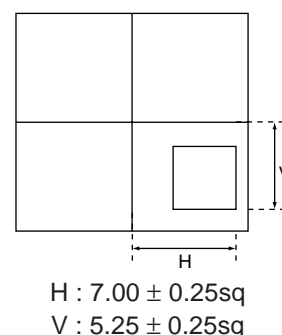


Fig. 5-4

## 5-6. P IN P SUB CONTRAST ADJUSTMENT (PCON)

1. Receive the color-bar signal.
2. PICTURE : maximum  
COLOR : minimum  
BRIGHTNESS : minimum
3. Set to service mode.
4. Connect an oscilloscope between ⑨ pin of CN303 connector (A board) and ground.
5. Select “PCON” and adjust so that wave form level is  $1.4 \pm_{0.05}^{0.00}$  Vp-p.
6. Write the data into memory.

MUTING → ENTER

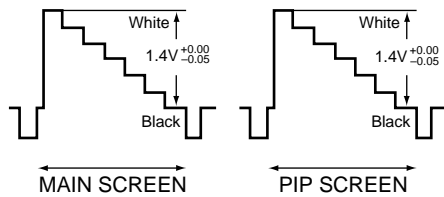


Fig. 5-5

## 5-7. P IN P SUB HUE, SUB COLOR ADJUSTMENT (SSHU, SSCL)

1. Receive the color-bar signal.
2. PICTURE : maximum  
COLOR : center  
BRIGHTNESS : center  
TRINITONE : medium
3. Set to service mode.
4. Connect an oscilloscope between pin ⑦ of CN004 connector (A board) and ground.
5. Select “SSHU” and “SSCL”, adjust them to have  $VB1 = VB4$  and  $VB2 = VB3$  in the wave form levels.
6. Write the data into memory.

MUTING → ENTER

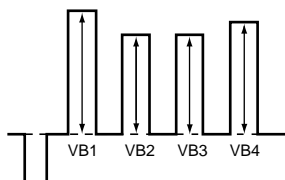
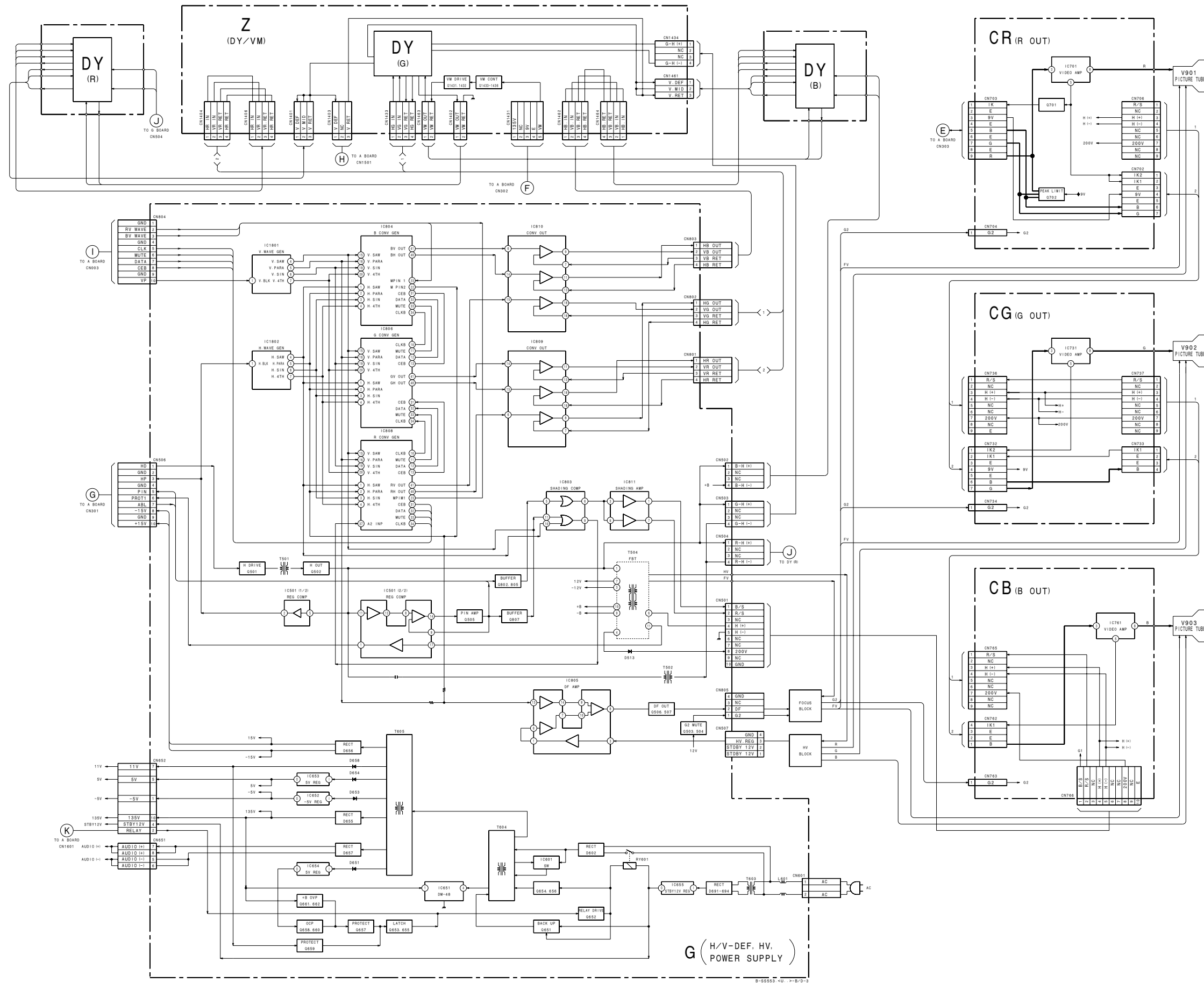


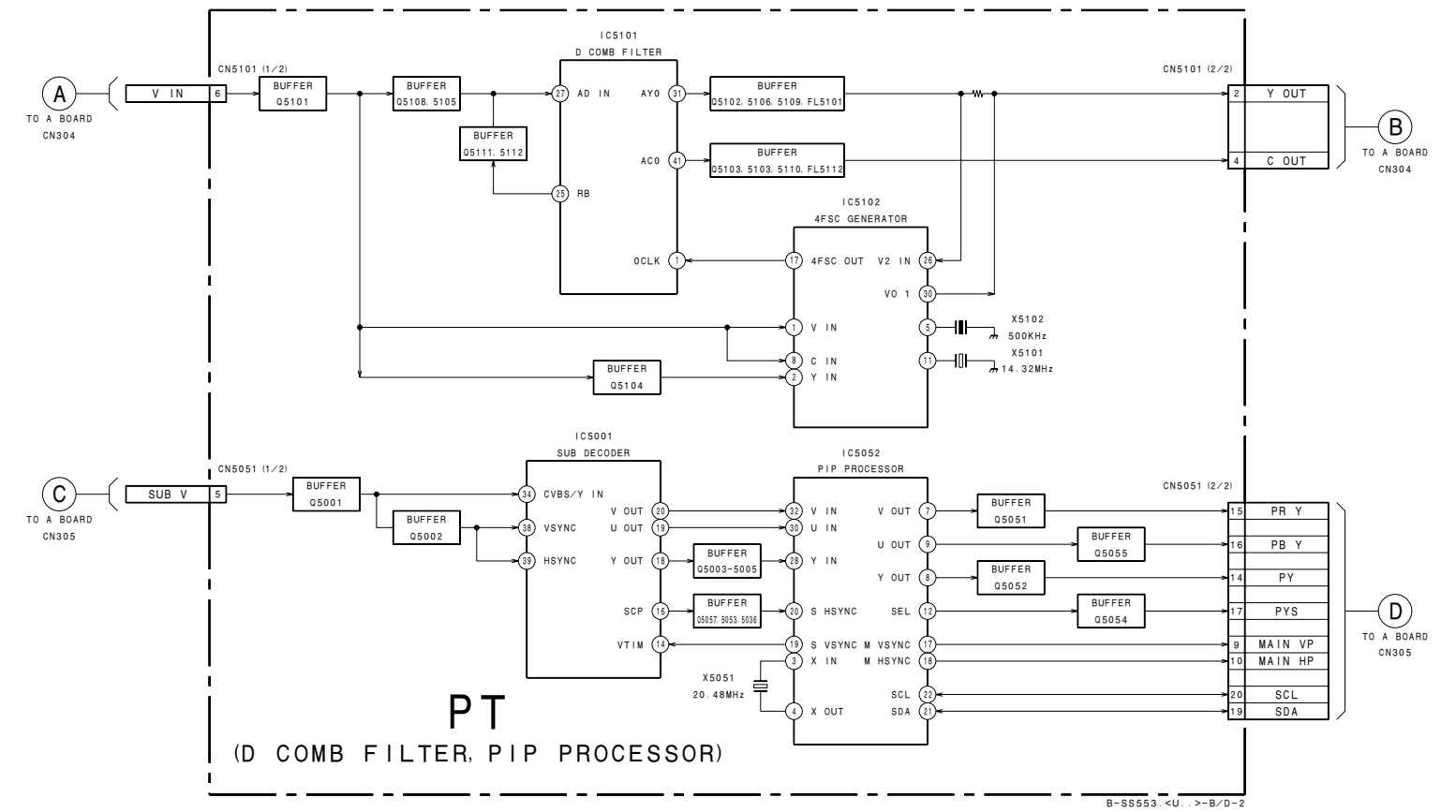
Fig. 5-6



### BLOCK DIAGRAM (2)

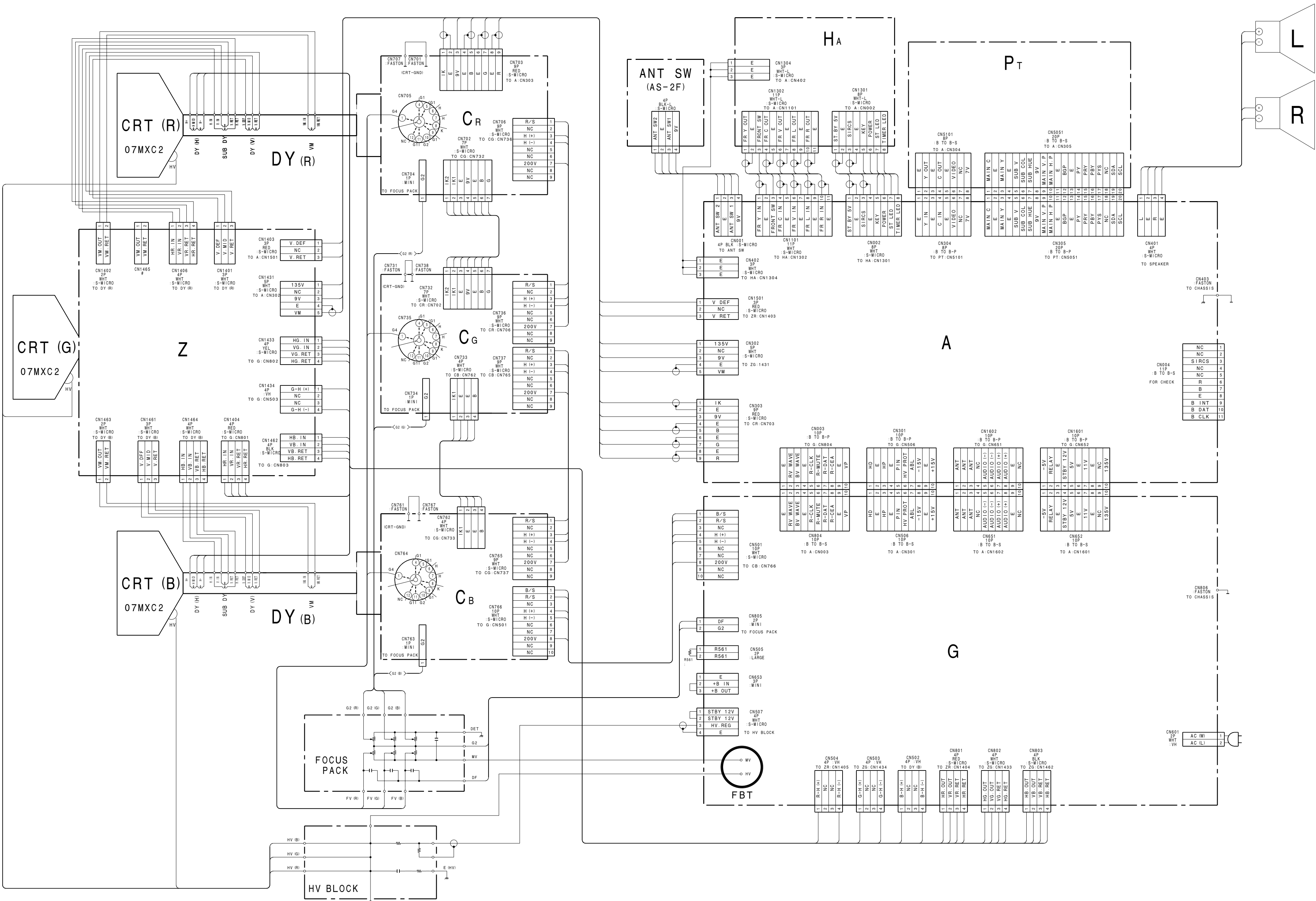


### BLOCK DIAGRAM (3)

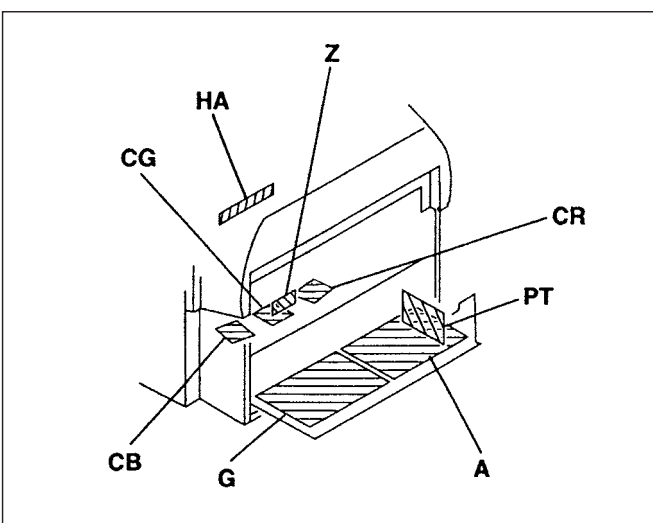




6-2. FRAME SCHEMATIC DIAGRAM



6-3. CIRCUIT BOARDS LOCATION



6-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:  
• Capacitors without voltage indication are all 50V.  
• All resistors are in ohms.  
• Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5mm  
Rating electrical power: 1/4 W

- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-chassis.

The components identified by in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.

Should replacement be required, replace only with the value originally used.

When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved. (Refer to R514, R561 and C514 adjustment on Page xx - xx.)

Part replaced (  )	Adjustment (  )
C514, C515, C516, IC651, T502, T503, T504, DY	HV Regulator (C514)
C507, C513, D501, D504, D507, IC301, IC501, IC651, R502, R514, R516, R517, R539, R560, R561, T502, T503, T504, DY	HV HOLD-DOWN (R514, R561)

- As to the voltage value shown by the semiconductors on the Schematic Diagram, see the another list.
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- \*: Measurement impossibility.
- Circled numbers are waveform references.
- : B+ bus.
- : B- bus.
- : signal path.(RF)

Reference information  
RESISTOR : RN METAL FILM  
: RC SOLID  
: FFRD NONFLAMMABLE CARBON  
: FRDSE NONFLAMMABLE FUSIBLE  
: RW NONFLAMMABLE WIREWOUND  
: RS NONFLAMMABLE METAL OXIDE  
: RB NONFLAMMABLE CEMENT  
: \* ADJUSTMENT RESISTOR  
COIL : LF-BL MICRO INDUCTOR  
CAPACITOR : TA TANTALUM  
: PS STYROL  
: PP POLYPROPYLENE  
: PT MYLAR  
: MPS METALIZED POLYESTER  
: MPP METALIZED POLYPROPYLENE  
: ALB BIPOlar  
: ALT HIGH TEMPERATURE  
: ALR HIGH RIPPLE

Note: The symbol display is on the component side.

The components identified by shading and mark are critical for safety. Replace only with part number specified.

The symbol indicate fast operating fuse. Replace only with fuse of same rating as maked.

Note: Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit etre remplacée par une fusible de meme valeur, comme maque.

Terminal name of semiconductors in silk screen printed circuit ( \* )

Device	Printed symbol	Terminal name	Circuit
① Transistor		Collector Base Emitter	
② Transistor		Collector Base Emitter	
③ Diode		Cathode Anode	
④ Diode		Cathode Anode (NC)	
⑤ Diode		Cathode Anode (NC)	
⑥ Diode		Common Anode Cathode	
⑦ Diode		Common Anode Cathode	
⑧ Diode		Common Anode Anode	
⑨ Diode		Common Anode Anode	
⑩ Diode		Common Cathode Cathode	
⑪ Diode		Common Cathode Cathode	
⑫ Diode		Anode Cathode Anode Cathode	
⑬ Transistor (FET)		Drain Gate Source	
⑭ Transistor (FET)		Drain Gate Source	
⑮ Transistor (FET)		Source Drain Gate	
— Discrete semiconductor			

(Chip semiconductors that are not actually used are included.)

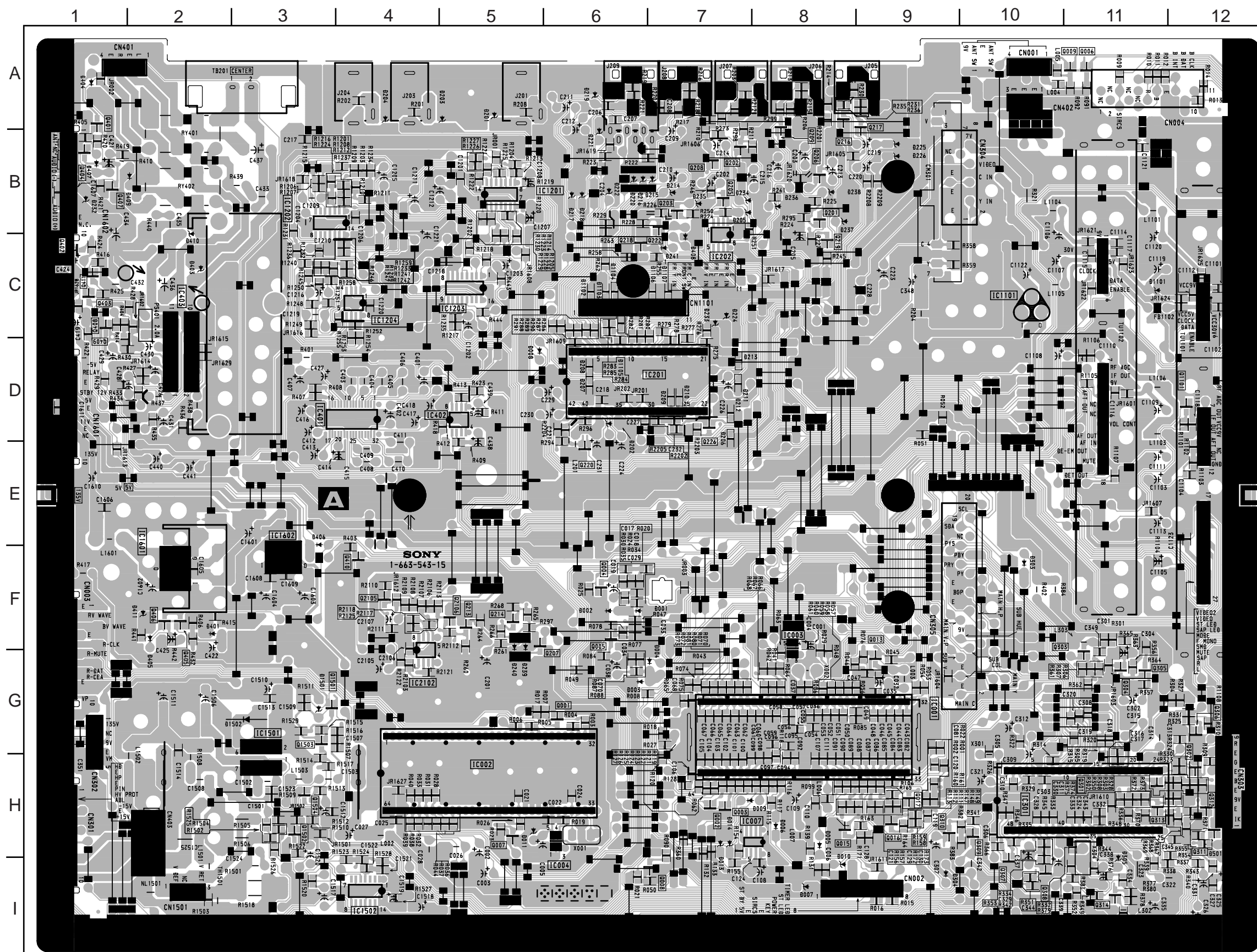


# A BOARD IC VOLTAGE LIST

REF.	PIN NO.	VOL.	REF.	PIN NO.	VOL.	REF.	PIN NO.	VOL.	REF.	PIN NO.	VOL.	REF.	PIN NO.	VOL.
IC001	①	0	IC001	⑩	4.7	IC201	①	4.2	IC301	①	0	IC401	①	0
	②	0		⑪	4.9		②	4.9		②	0		②	0
	③	0		⑫	0		③	4.2		③	0		③	4.4
	④	0		⑬	3.7		④	4.8		④	5.0		④	4.9
	⑤	0		⑭	0		⑤	4.7		⑤	5.0		⑤	4.4
	⑥	4.8		⑮	0		⑥	5.0		⑥	6.7		⑥	4.4
	⑦	0		⑯	4.1		⑦	4.2		⑦	5.0		⑦	4.4
	⑧	0		⑰	0		⑧	5.0		⑧	6.5		⑧	4.4
	⑨	0		⑱	4.4		⑨	4.2		⑨	0.8		⑨	4.4
	⑩	0		⑲	4.9		⑩	4.8		⑩	6.7		⑩	4.4
IC002	⑪	4.9	IC002	⑳	4.7	IC003	⑪	4.7	IC004	⑪	0.8	IC101	⑪	5.1
	⑫	4.3		㉑	0		⑫	4.8		⑫	4.1		⑫	4.4
	⑬	0		㉒	0		⑬	4.2		⑬	1.5		⑬	4.4
	⑭	4.9		㉓	GND		⑭	4.9		⑭	5.4		⑭	4.4
	⑮	GND		㉔	2.4		⑮	4.2		⑮	0.6		⑮	GND
	⑯	2.4		㉕	2.1		⑯	GND		⑯	2.9		⑯	4.4
	⑰	2.1		㉖	GND		⑰	GND		⑰	3.0		⑰	4.4
	⑱	0		㉗	GND		⑱	4.8		⑱	3.8		⑱	4.4
	㉑	4.9		㉘	GND		㉑	4.8		㉑	4.2		㉑	9.0
	㉒	2.3		㉙	GND		㉒	GND		㉒	4.6		㉒	1.4
IC003	㉓	2.4	IC003	㉚	GND	IC004	㉓	4.3	IC005	㉓	8.7	IC102	㉓	3.0
	㉔	0		㉛	GND		㉔	6.9		㉔	3.4		㉔	15.3
	㉕	0		㉜	4.8		㉕	4.2		㉕	4.1		㉕	3.1
	㉖	GND		㉞	4.2		㉖	4.2		㉖	3.4		㉖	1.4
	㉗	1.8		㉟	GND		㉟	4.2		㉟	4.1		㉟	0
	㉘	2.2		㊱	GND		㊱	6.2		㊱	2.3		㊱	0.2
	㉙	5.0		㊱	4.8		㊱	4.6		㊱	GND		㊱	28.2
	㉚	1.9		㊱	0		㊱	GND		㊱	2.6		㊱	0.1
	㉛	0		㊱	2.2		㊱	5.7		㊱	2.7		㊱	GND
	㉜	0		㊱	2.8		㊱	4.3		㊱	3.9		㊱	1.2
IC004	㉝	0	IC004	㊱	2.2	IC005	㊱	4.2	IC006	㊱	5.7	IC103	㊱	14.4
	㉞	0		㊱	4.2		㊱	6.1		㊱	5.7		㊱	-14.0
	㉟	0		㊱	GND		㊱	GND		㊱	0.3		㊱	-15.4
	㊱	0		㊱	GND		㊱	4.3		㊱	GND		㊱	0.8
	㊱	0		㊱	4.9		㊱	4.4		㊱	GND		㊱	14.5
	㊱	0		㊱	8.9		㊱	GND		㊱	GND		㊱	1.2
	㊱	0		㊱	4.5		㊱	4.4		㊱	4.4		㊱	-0.3
	㊱	0		㊱	4.2		㊱	4.4		㊱	4.4		㊱	4.4
	㊱	0		㊱	5.2		㊱	4.4		㊱	4.4		㊱	0
	㊱	0		㊱	5.0		㊱	4.2		㊱	4.4		㊱	GND
IC005	㊱	0	IC005	㊱	GND	IC006	㊱	2.1	IC007	㊱	4.4	IC104	㊱	4.4
	㊱	0		㊱	GND		㊱	4.4		㊱	4.4		㊱	0
	㊱	2.7		㊱	GND		㊱	5.6		㊱	4.4		㊱	0
	㊱	4.9		㊱	4.9		㊱	3.9		㊱	4.4		㊱	-0.3
	㊱	4.9		㊱	0		㊱	4.4		㊱	4.4		㊱	4.4
	㊱	4.9		㊱	GND		㊱	3.5		㊱	3.0		㊱	-5.1
	㊱	GND		㊱	GND		㊱	8.8		㊱	9.8		㊱	10.9
	㊱	GND		㊱	GND		㊱	4.8		㊱	4.8		㊱	GND
	㊱	4.7		㊱	GND		㊱	4.8		㊱	4.8		㊱	9.0
	㊱	0		㊱	4.8		㊱	0		㊱	GND		㊱	11.9
IC006	㊱	0	IC006	㊱	4.8	IC007	㊱	6.4	IC008	㊱	3.9	IC105	㊱	GND
	㊱	0		㊱	6.1		㊱	3.9		㊱	3.9		㊱	5.0
	㊱	4.7		㊱	6.1		㊱	1.8		㊱	1.8		㊱	0
	㊱	4.7		㊱	5.0		㊱	GND		㊱	1.8		㊱	0
	㊱	4.7		㊱	4.9		㊱	GND		㊱	1.8		㊱	0
	㊱	4.7		㊱	4.9		㊱	GND		㊱	1.8		㊱	0
	㊱	4.7		㊱	4.9		㊱	GND		㊱	1.8		㊱	0
	㊱	4.7		㊱	4.9		㊱	GND		㊱	1.8		㊱	0
	㊱	4.7		㊱	4.9		㊱	GND		㊱	1.8		㊱	0
	㊱	4.7		㊱	4.9		㊱	GND		㊱	1.8		㊱	0



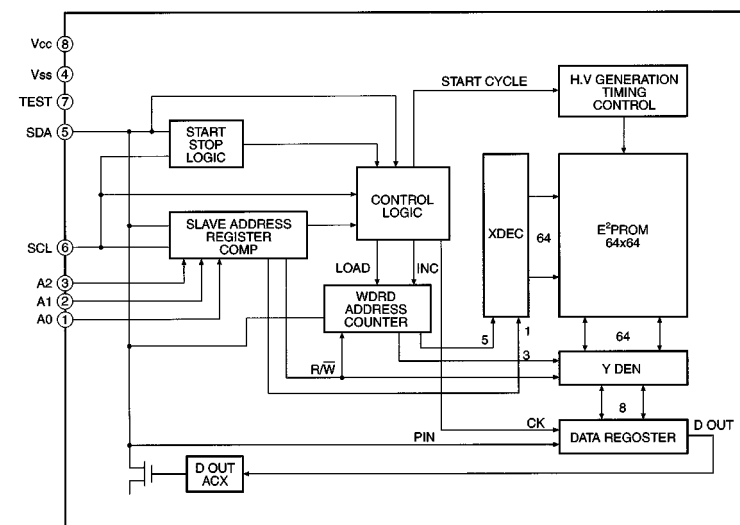
**– A Board –**



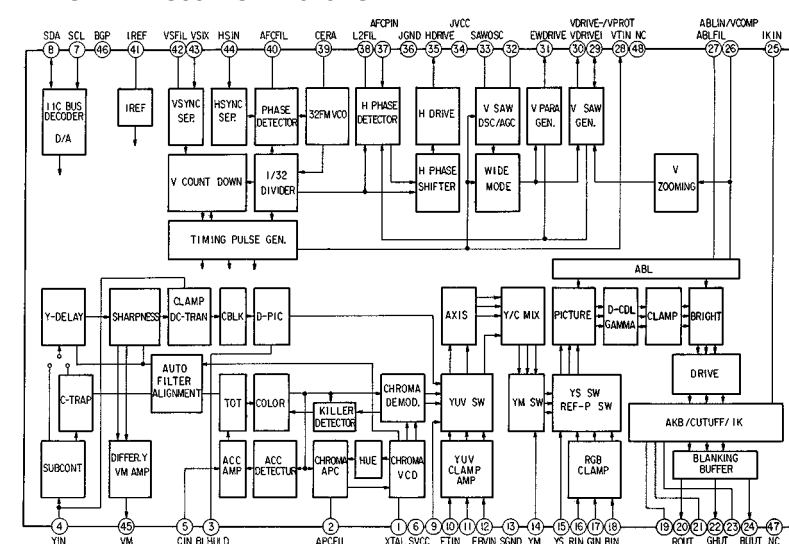
## A BOARD

DIODE		*	Q006	A-11	①
D001	F-6	—	Q007	H-5	①
D002	F-6	—	Q008	I-7	①
D003	G-6	—	Q009	A-11	①
D004	G-7	—	Q013	G-9	①
D007	I-8	—	Q015	H-8	①
D010	I-8	—	Q016	H-9	①
D011	H-5	—	Q017	H-9	①
D202	D-6	—	Q201	B-8	①
D203	D-7	③	Q206	B-8	①
D206	D-7	③	Q207	F-5	①
D207	D-6	③	Q209	A-8	①
D208	D-6	③	Q213	F-5	①
D209	D-7	③	Q214	F-5	①
D210	D-7	③	Q216	A-8	①
D211	D-7	③	Q217	A-9	①
D212	D-7	③	Q218	C-6	①
D213	D-7	③	Q219	C-8	①
D214	B-7	—	Q220	E-6	①
D215	B-7	—	Q226	D-7	①
D216	B-6	—	Q301	H-11	①
D217	B-6	—	Q302	H-12	①
D218	B-6	—	Q303	G-11	①
D219	A-6	—	Q304	G-11	①
D220	B-6	—	Q305	G-11	①
D221	B-6	—	Q306	G-12	①
D222	B-6	—	Q307	I-10	①
D225	B-9	—	Q308	I-10	①
D226	B-9	—	Q311	H-12	①
D232	B-1	—	Q312	H-12	①
D236	B-8	—	Q313	H-11	①
D237	B-8	—	Q314	I-11	①
D238	B-8	—	Q402	C-1	①
D239	F-5	—	Q403	C-1	①
D240	F-5	—	Q405	F-2	①
D241	C-7	—	Q406	F-2	①
D305	I-11	—	Q408	C-1	①
D401	F-2	—	Q409	D-1	①
D403	C-2	—	Q410	F-4	①
D405	F-2	—	Q1101	D-12	①
D406	F-3	—	Q1501	G-3	①
D408	C-7	—	Q2105	F-4	①
D410	C-2	—	Q2106	F-5	①
D411	F-2	—	IC		
D1101	C-11	—	IC001	G-8	①
D1102	C-6	③	IC002	H-5	①
D1103	C-6	③	IC003	F-8	①
D1104	C-6	③	IC004	H-6	①
D1105	C-6	③	IC007	H-8	①
D1106	C-7	③	IC201	D-6	①
D1107	C-7	③	IC301	H-11	①
D1501	G-3	—	IC401	D-4	①
D1502	G-3	—	IC402	D-5	①
TRANSISTOR		*	IC403	D-2	①
Q001	G-1	①	IC1101	C-10	①
Q002	H-7	①	IC1501	G-3	①
Q003	H-7	①	IC1502	I-4	①
Q004	F-6	①	IC1601	F-2	①
Q005	F-6	①	IC1602	F-3	①

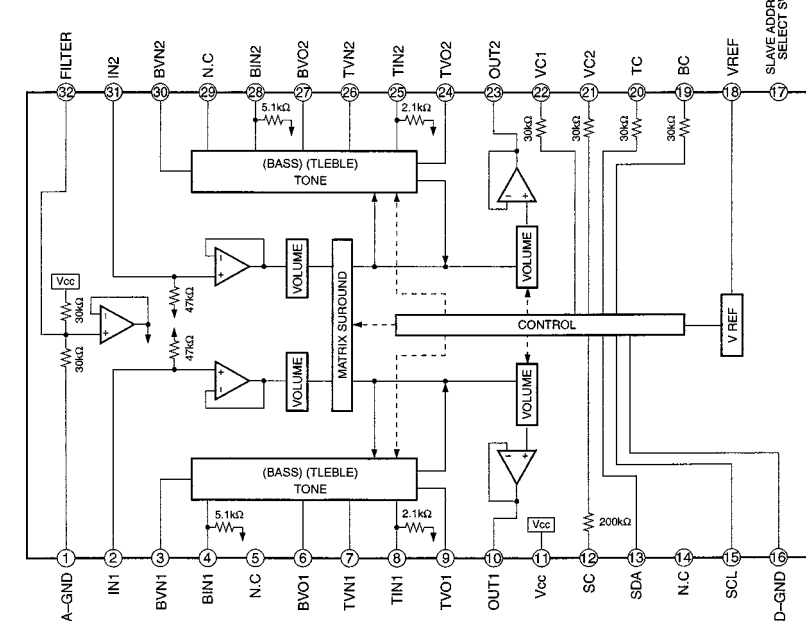
A BOARD : IC007 ST24C04FM6TR



**A BOARD : IC301 CXA2025AS**

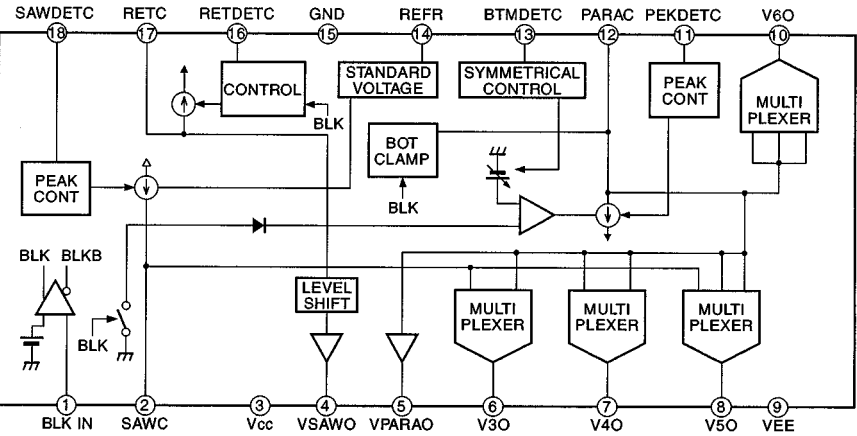


**A BOARD : IC401 BH3856FS**

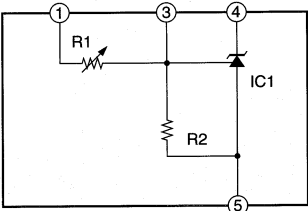




G BOARD : IC801, 802 PA0053B



G BOARD : IC651 DM-58



G BOARD

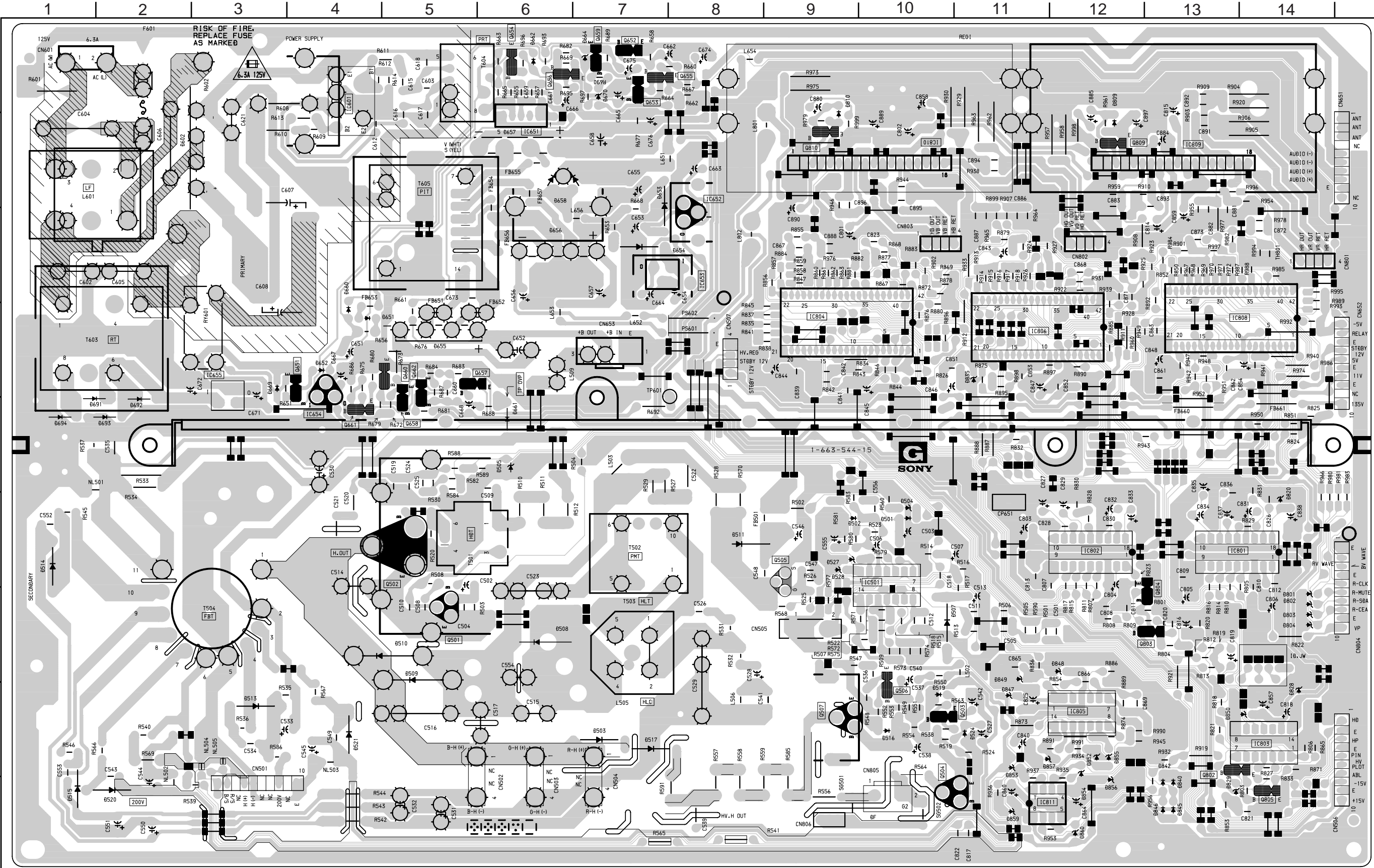
DIODE			TRANSISTOR		
D501	F-10	-	Q501	G-5	-
D502	F-9	-	Q502	F-5	-
D503	H-7	-	Q503	H-10	-
D504	F-10	-	Q504	I-11	-
D507	H-10	-	Q505	F-9	-
D508	G-6	-	Q506	H-10	-
D509	G-5	-	Q507	H-9	-
D510	G-4	-	Q651	D-4	-
D511	F-8	-	Q652	A-7	-
D513	H-3	-	Q653	A-7	-
D514	F-1	-	Q654	A-6	-
D515	I-1	-	Q655	A-7	-
D517	H-7	-	Q656	A-6	-
D519	H-10	-	Q657	D-5	-
D520	I-2	-	Q658	E-5	-
D521	H-4	-	Q659	A-7	-
D524	H-11	-	Q660	D-5	-
D527	F-9	-	Q661	E-4	-
D528	F-9	-	Q662	D-5	-
D602	B-3	-	Q802	H-13	-
D651	D-4	-	Q803	G-13	-
D652	D-4	-	Q804	G-13	-
D653	C-7	-	Q805	I-14	-
D654	C-7	-	Q809	B-12	-
D655	D-5	-	Q810	B-9	-
D656	C-6	-	IC		
D657	B-6	-	IC501	F-10	-
D658	B-6	-	IC601	A-4	-
D660	D-4	-	IC651	B-6	-
D661	E-6	-	IC652	C-8	-
D662	A-6	-	IC653	C-7	-
D664	A-7	-	IC654	E-4	-
D669	D-3	-	IC655	E-3	-
D670	A-7	-	IC801	F-14	-
D691	E-1	-	IC802	F-12	-
D692	E-2	-	IC803	H-14	-
D693	E-2	-	IC804	D-9	-
D694	E-1	-	IC805	H-12	-
D801	G-14	-	IC806	D-11	-
D802	G-14	-	IC808	D-13	-
D803	G-14	-	IC809	B-13	-
D804	G-14	-	IC810	B-10	-
D809	B-12	-	IC811	I-11	-
D810	B-9	-			
D820	F-14	-			
D828	H-14	-			
D829	I-13	-			
D835	D-11	-			
D840	I-13	-			
D842	I-13	-			
D845	I-13	-			
D846	I-13	-			
D847	H-11	-			
D848	G-12	-			

NOTE :

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

[POWER SUPPLY, HV, RGB CONV, H/V WAVE GNE]

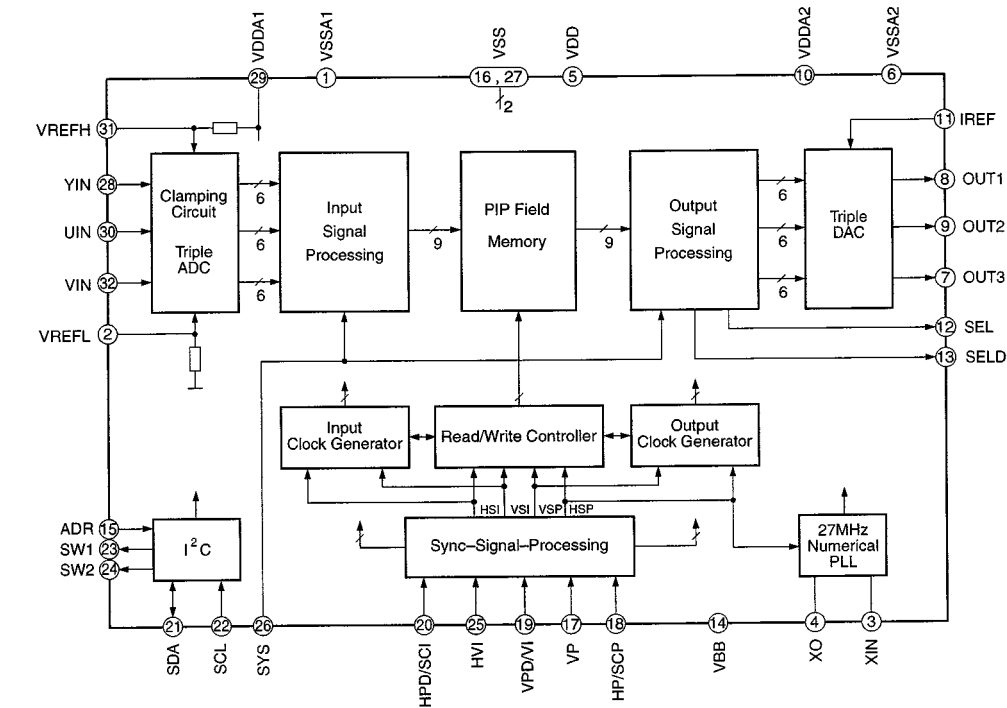
- G Board -



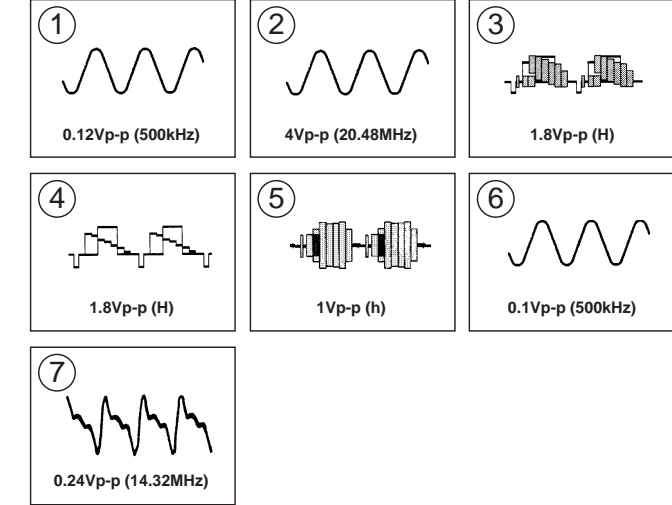








## • PT BOARD WAVEFORMS



## PT BOARD IC VOLTAGE LIST

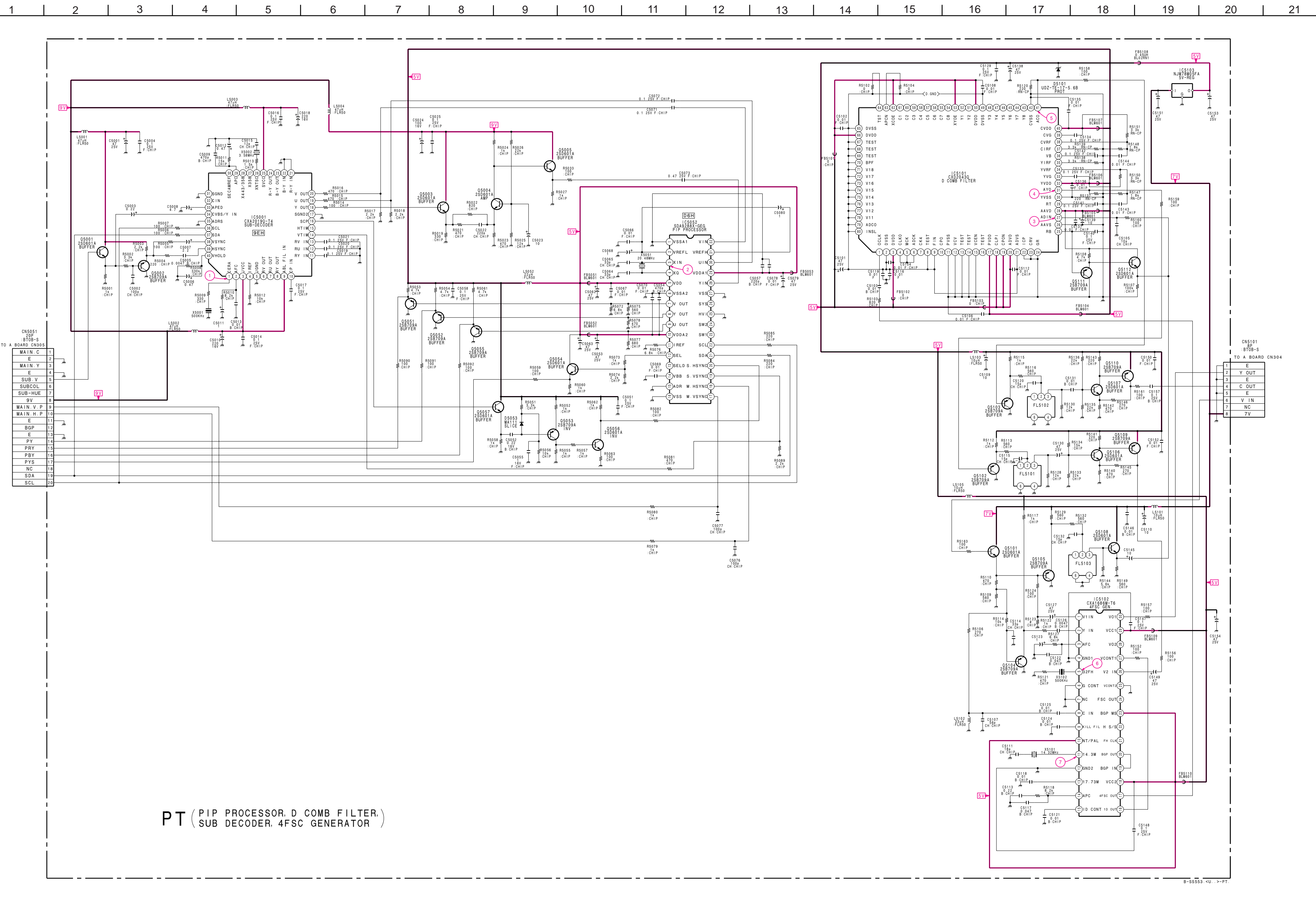
REF.	Pin NO.	VOL.	REF.	Pin NO.	VOL.
IC5001	①	2.3	IC5101	⑩	GND
	②	4.1		⑪	GND
	③	9.0		⑫	4.9
	④	0		⑬	4.9
	⑤	GND		⑭	4.9
	⑥	9.0		⑮	4.9
	⑦	1.0		⑯	3.6
	⑧	3.6		⑰	GND
	⑨	4.5		⑱	4.6
	⑩	0.1		⑲	1.5
	⑪	0.7		⑳	1.5
	⑫	GND		㉑	2.6
IC5052	⑬	2.6	IC5102	⑳	GND
	⑭	2.9		㉑	0.9
	⑮	2.9		㉒	4.9
	⑯	GND		㉓	2.9
	⑰	0.9		㉔	1.8
	⑱	GND		㉕	0.9
	⑲	4.9		㉖	0
	㉑	3.3		㉗	3.6
	㉒	0		㉘	4.8
	㉓	GND		㉙	4.9
	㉔	4.8		㉚	4.1
IC5101	㉕	4.1	IC5102	㉛	GND
	㉖	3.3		㉜	GND
	㉗	0.7		㉝	0
	㉘	GND		㉞	0.1
	㉙	0.1		㉟	GND
	㉚	0.5		㊱	GND
	㉛	4.8		㊲	GND
	㉜	4.8		㊳	2.2
	㉝	GND		㊴	2.0
	㉞	GND		㊵	2.5
	㉟	1.6		㊶	1.1

\*All voltage are in V.  
\*Pin numbers which are not described are not used.

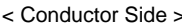
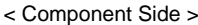
## PT BOARD TRANSISTOR VOLTAGE LIST

REF.	VOL.	REF.	VOL.
Q5001	B 6.5	Q5101	B 2.5
	E 5.8		E 1.9
	C 8.8		C 5.0
Q5002	B 5.8	Q5102	E 1.8
	C 6.5		C GND
	E 2.2		E 1.6
Q5003	B 2.8	Q5103	B 0.9
	C 8.5		C GND
	E 2.2		E 1.5
Q5004	B 2.8	Q5104	B 0.8
	C 4.1		C GND
	E 4.1		E 1.9
Q5005	B 3.5	Q5105	E 2.6
	C 8.5		C GND
	E 0.4		B 2.4
Q5006	B 0	Q5106	B 2.4
	C GND		C 4.4
	E 4.4		B 2.4
Q5007	B 0	Q5107	E 1.7
	C GND		C 4.4
	E 4.4		B 2.3
Q5008	B *	Q5108	E 1.7
	C *		C 5.0
	E *		B 4.4
Q5009	B 0	Q5109	E 5.0
	C 4.9		C 2.0
	E 0.5		B 4.4
Q5010	B 0.5	Q5110	E 5.0
	C 4.9		C 2.0
	E 0.7		B 1.5
Q5011	B *	Q5111	E 2.1
	C *		B 2.1
	E *		C 1.5
Q5012	B 0	Q5112	E 1.5
	C GND		C 4.9
	E 4.9		


All voltages are in V.

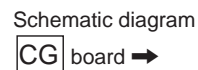


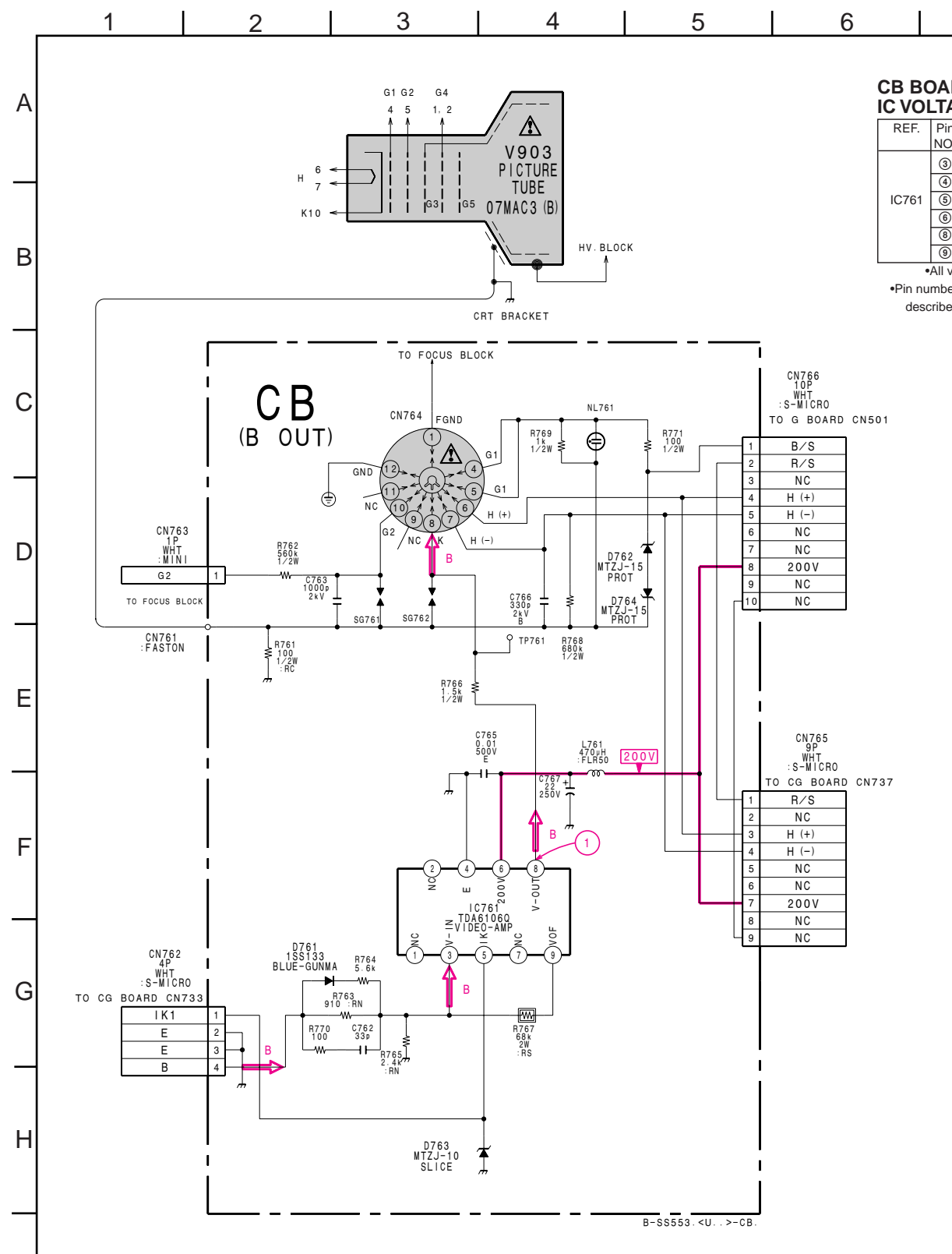
PT (PIP PROCESSOR, D COMB FILTER,  
SUB DECODER, 4FSC GENERATOR)



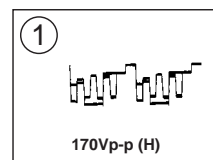
DIODE		*
D5053	C-8	③
D5101	E-9	③
TRANSISTOR		*
Q5001	A-10	①
Q5002	A-1	②
Q5003	B-2	②
Q5004	B-3	②
Q5005	B-3	②
Q5051	C-1	②
Q5052	C-1	②
Q5053	C-8	①
Q5054	D-1	②
Q5055	D-1	②
Q5056	C-8	①
Q5057	C-3	②
Q5101	G-9	①
Q5102	F-2	②
Q5103	F-9	①
Q5104	F-8	①
Q5105	G-2	②
Q5106	F-10	①
Q5107	F-10	①
Q5108	G-9	①
Q5109	F-9	①
Q5110	F-9	①
Q5111	H-7	①
Q5112	H-7	①
IC		
IC5001	A-2	
IC5052	C-2	
IC5101	E-4	
IC5102	E-3	
IC5103	E-2, E-9	

-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.



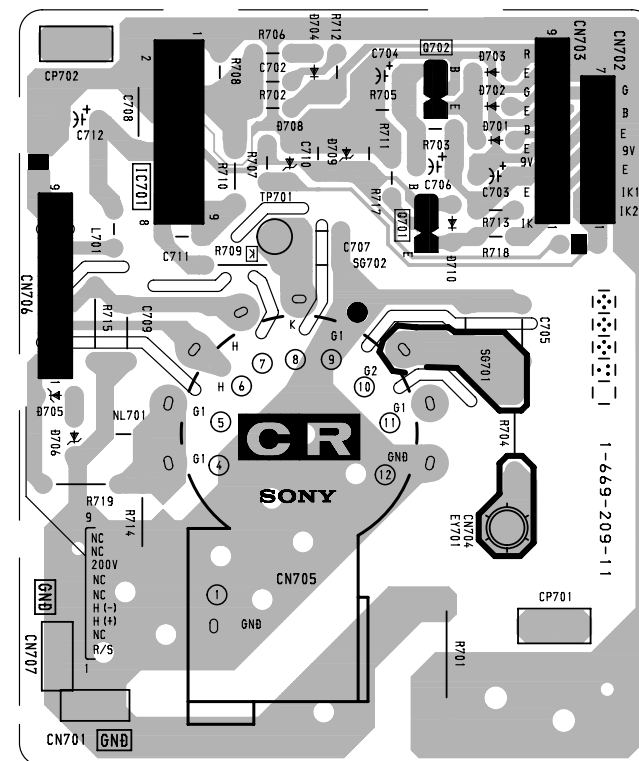


• CB BOARD WAVEFORM

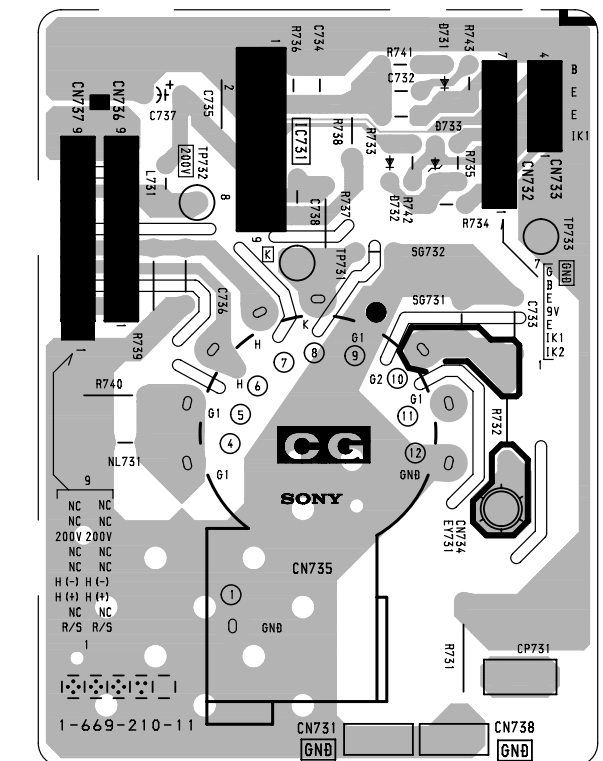


**CR** [R OUT] **CG** [G OUT] **CB** [B OUT]

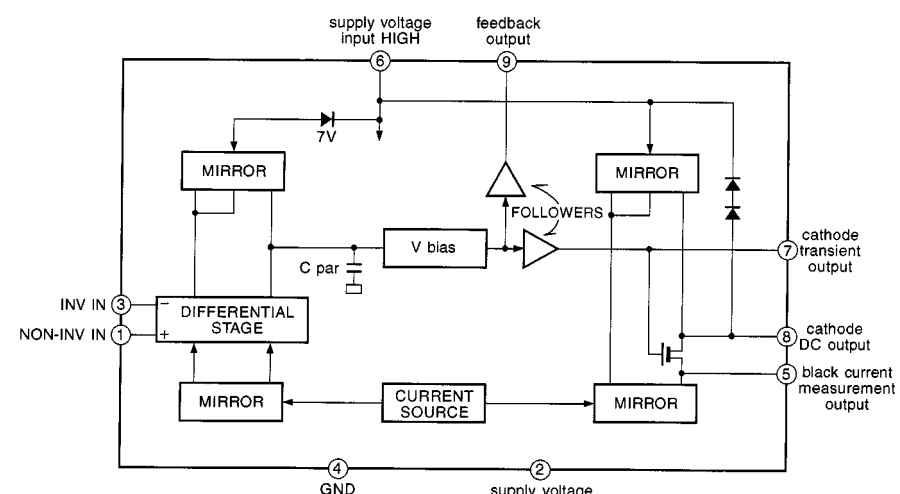
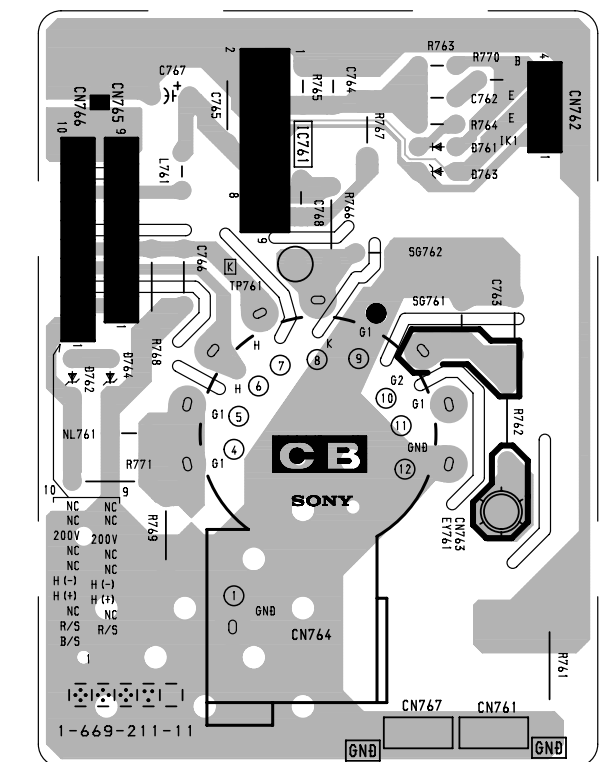
– CR Board –



– CG Board –



– CB Board –





REF.		VOL.
Q1431	B	0.9
	E	0.5
	C	67.2
Q1432	B	134.4
	E	138.4
	C	67.2
Q1433	B	5.7
	E	5.8
	C	GND
Q1434	B	5.7
	E	5.8
	C	9.0
Q1435	B	2.7
	E	2.1
	C	5.7
Q1436	B	2.7
	E	2.1
	C	9.0

The schematic diagram illustrates the Z (DY/VM) section of a circuit board, showing the internal wiring and component connections for the DY (R), DY (G), and DY (B) channels, as well as the VM (Video Mixer) section.

**Connectors and Pinouts:**

- DY (R) 4P : VH TO G: CN504**
  - 1 R-H (+)
  - 2 NC
  - 3 NC
  - 4 R-H (-)
- DY (G) 4P : VH TO G: CN504**
  - 1 R-H (+)
  - 2 NC
  - 3 NC
  - 4 R-H (-)
- DY (B) 4P : VH TO G: CN502**
  - 1 B-H (+)
  - 2 NC
  - 3 NC
  - 4 B-H (-)
- VM 4P : VH TO G: CN502**
  - 1 B-H (+)
  - 2 NC
  - 3 NC
  - 4 B-H (-)

**Key Components and Connections:**

- Resistors:** R1431, R1432, R1433, R1434, R1435, R1436, R1437, R1438, R1439, R1440, R1441, R1442, R1443, R1444, R1445, R1446, R1447, R1448, R1449, R1450, R1451, R1452, R1453, R1454, R1455, R1456, R1457, R1458, R1459, R1460, R1461, R1462, R1463, R1464, R1465, R1466, R1467, R1468, R1469, R1470, R1471, R1472, R1473, R1474, R1475, R1476, R1477, R1478, R1479, R1480, R1481, R1482, R1483, R1484, R1485, R1486, R1487, R1488, R1489, R1490, R1491, R1492, R1493, R1494, R1495, R1496, R1497, R1498, R1499, R1500, R1501, R1502, R1503, R1504, R1505, R1506, R1507, R1508, R1509, R1510, R1511, R1512, R1513, R1514, R1515, R1516, R1517, R1518, R1519, R1520, R1521, R1522, R1523, R1524, R1525, R1526, R1527, R1528, R1529, R1530, R1531, R1532, R1533, R1534, R1535, R1536, R1537, R1538, R1539, R1540, R1541, R1542, R1543, R1544, R1545, R1546, R1547, R1548, R1549, R1550, R1551, R1552, R1553, R1554, R1555, R1556, R1557, R1558, R1559, R1560, R1561, R1562, R1563, R1564, R1565, R1566, R1567, R1568, R1569, R1570, R1571, R1572, R1573, R1574, R1575, R1576, R1577, R1578, R1579, R1580, R1581, R1582, R1583, R1584, R1585, R1586, R1587, R1588, R1589, R1590, R1591, R1592, R1593, R1594, R1595, R1596, R1597, R1598, R1599, R1600, R1601, R1602, R1603, R1604, R1605, R1606, R1607, R1608, R1609, R1610, R1611, R1612, R1613, R1614, R1615, R1616, R1617, R1618, R1619, R1620, R1621, R1622, R1623, R1624, R1625, R1626, R1627, R1628, R1629, R1630, R1631, R1632, R1633, R1634, R1635, R1636, R1637, R1638, R1639, R1640, R1641, R1642, R1643, R1644, R1645, R1646, R1647, R1648, R1649, R1650, R1651, R1652, R1653, R1654, R1655, R1656, R1657, R1658, R1659, R1660, R1661, R1662, R1663, R1664, R1665, R1666, R1667, R1668, R1669, R1670, R1671, R1672, R1673, R1674, R1675, R1676, R1677, R1678, R1679, R1680, R1681, R1682, R1683, R1684, R1685, R1686, R1687, R1688, R1689, R1690, R1691, R1692, R1693, R1694, R1695, R1696, R1697, R1698, R1699, R1700, R1701, R1702, R1703, R1704, R1705, R1706, R1707, R1708, R1709, R1710, R1711, R1712, R1713, R1714, R1715, R1716, R1717, R1718, R1719, R1720, R1721, R1722, R1723, R1724, R1725, R1726, R1727, R1728, R1729, R1730, R1731, R1732, R1733, R1734, R1735, R1736, R1737, R1738, R1739, R1740, R1741, R1742, R1743, R1744, R1745, R1746, R1747, R1748, R1749, R1750, R1751, R1752, R1753, R1754, R1755, R1756, R1757, R1758, R1759, R1760, R1761, R1762, R1763, R1764, R1765, R1766, R1767, R1768, R1769, R1770, R1771, R1772, R1773, R1774, R1775, R1776, R1777, R1778, R1779, R1780, R1781, R1782, R1783, R1784, R1785, R1786, R1787, R1788, R1789, R1790, R1791, R1792, R1793, R1794, R1795, R1796, R1797, R1798, R1799, R1800, R1801, R1802, R1803, R1804, R1805, R1806, R1807, R1808, R1809, R1810, R1811, R1812, R1813, R1814, R1815, R1816, R1817, R1818, R1819, R1820, R1821, R1822, R1823, R1824, R1825, R1826, R1827, R1828, R1829, R1830, R1831, R1832, R1833, R1834, R1835, R1836, R1837, R1838, R1839, R1840, R1841, R1842, R1843, R1844, R1845, R1846, R1847, R1848, R1849, R1850, R1851, R1852, R1853, R1854, R1855, R1856, R1857, R1858, R1859, R1860, R1861, R1862, R1863, R1864, R1865, R1866, R1867, R1868, R1869, R1870, R1871, R1872, R1873, R1874, R1875, R1876, R1877, R1878, R1879, R1880, R1881, R1882, R1883, R1884, R1885, R1886, R1887, R1888, R1889, R1890, R1891, R1892, R1893, R1894, R1895, R1896, R1897, R1898, R1899, R1900, R1901, R1902, R1903, R1904, R1905, R1906, R1907, R1908, R1909, R1910, R1911, R1912, R1913, R1914, R1915, R1916, R1917, R1918, R1919, R1920, R1921, R1922, R1923, R1924, R1925, R1926, R1927, R1928, R1929, R1930, R1931, R1932, R1933, R1934, R1935, R1936, R1937, R1938, R1939, R1940, R1941, R1942, R1943, R1944, R1945, R1946, R1947, R1948, R1949, R1950, R1951, R1952, R1953, R1954, R1955, R1956, R1957, R1958, R1959, R1960, R1961, R1962, R1963, R1964, R1965, R1966, R1967, R1968, R1969, R1970, R1971, R1972, R1973, R1974, R1975, R1976, R1977, R1978, R1979, R1980, R1981, R1982, R1983, R1984, R1985, R1986, R1987, R1988, R1989, R1990, R1991, R1992, R1993, R1994, R1995, R1996, R1997, R1998, R1999, R2000, R2001, R2002, R2003, R2004, R2005, R2006, R2007, R2008, R2009, R2010, R2011, R2012, R2013, R2014, R2015, R2016, R2017, R2018, R2019, R2020, R2021, R2022, R2023, R2024, R2025, R2026, R2027, R2028, R2029, R2030, R2031, R2032, R2033, R2034, R2035, R2036, R2037, R2038, R2039, R2040, R2041, R2042, R2043, R2

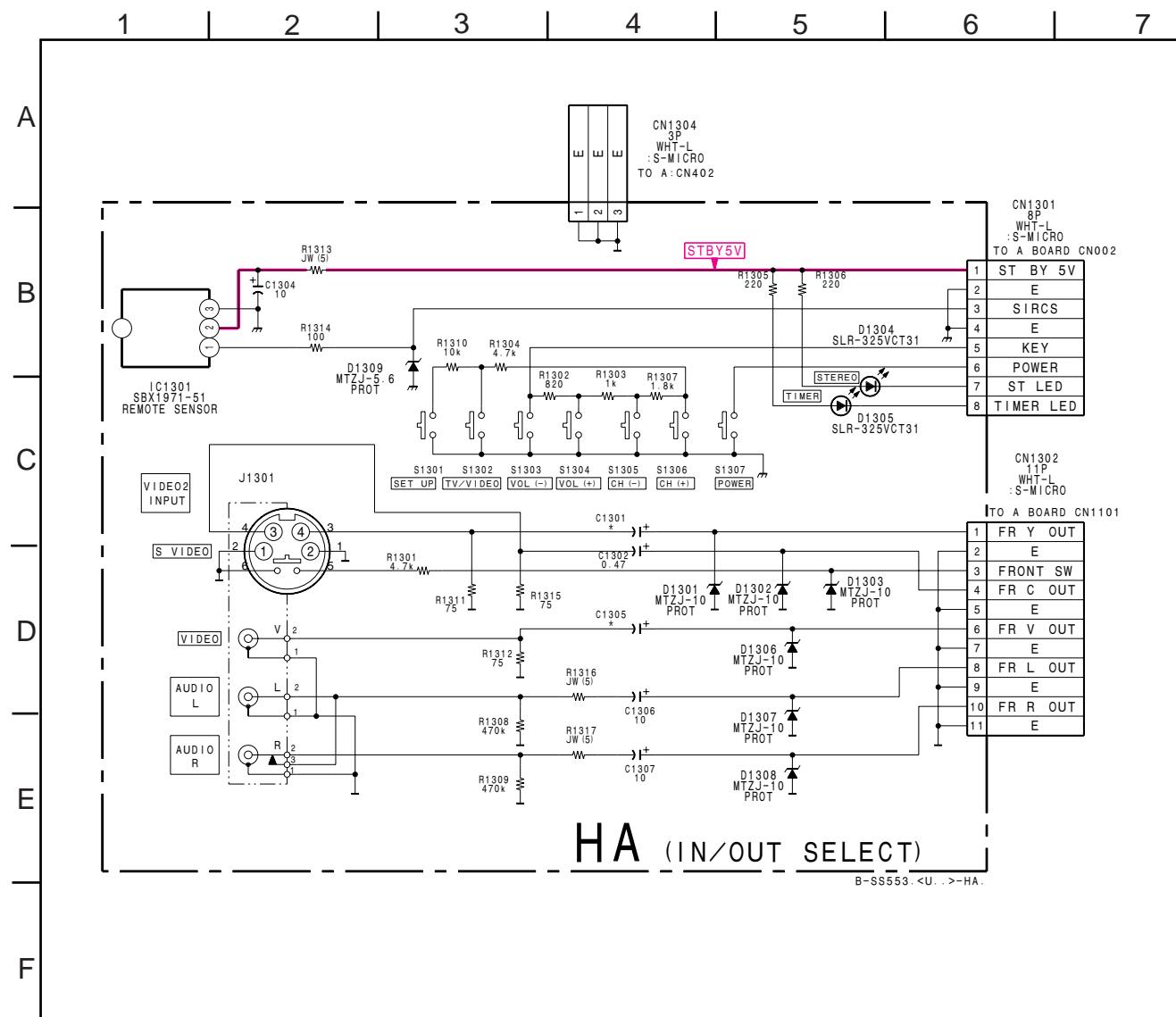


**– Z Board –**



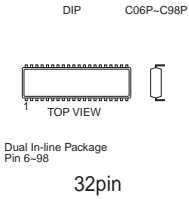
REF.	Pin NO.	VOL.
IC1301	①	5.0
	②	5.0
	③	GND

- All voltage are in V

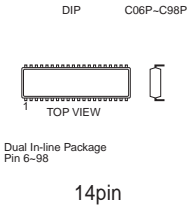


6-5. SEMICONDUCTORS

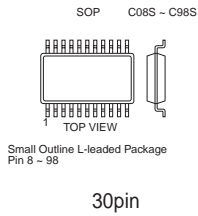
BH3856FS-E2



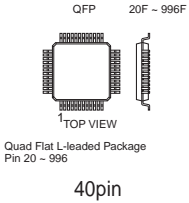
CA0007AM  
CA0007AD  
NJM2058D  
UPC339C



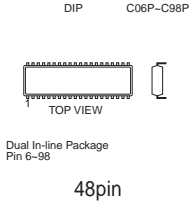
CXA1686M



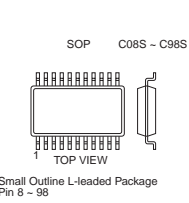
CXA2019Q



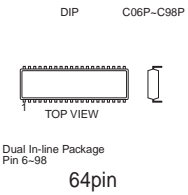
CXA2025AS



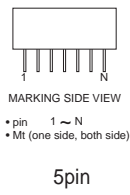
CXD2043Q



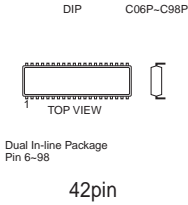
CXP85112B-613S  
CXP85856A-009S



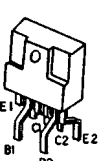
DM-58



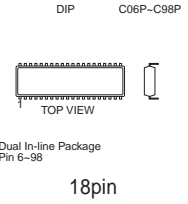
MM1313AD  
PM0011AS



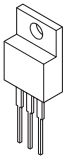
MX0841AB-F



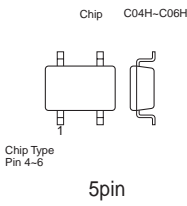
PA0053B



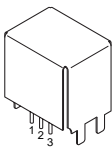
PQ09RF21  
TA7805S  
TA7812S



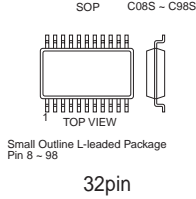
PST9143NL



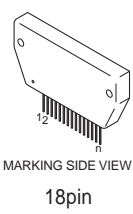
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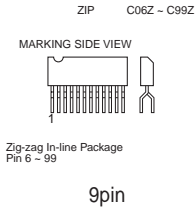
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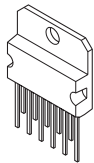
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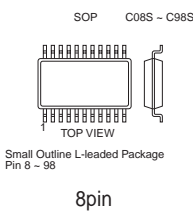
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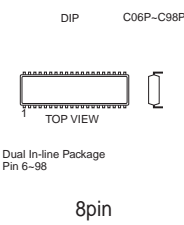
TDA7162



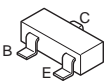
UPC4558G2



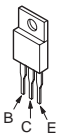
M5218AP  
X24C04S8



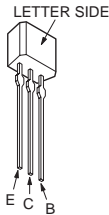
DTA144EKA-T146  
DTC143TKA-T146  
DTC144EKA  
2SA1162-G  
2SD601A-S



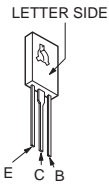
IRF614  
2SA1837  
2SC4793



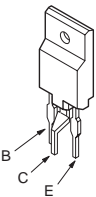
2SA1175-HFE  
2SC2785-HFE



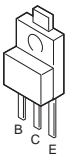
2SC2688-LK



2SC4632LS-CB7



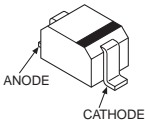
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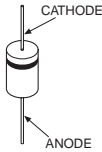
2SD2348 (LBSONY)



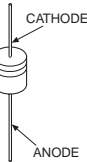
DTZ10B  
MA111  
RD5.6S-B



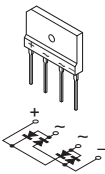
D1NL20  
EL1Z  
GP08D  
RGP02-20EL-6394



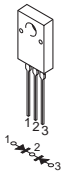
D1NS4  
HZS9.1NB2  
MTZJ-T-77-15  
MTZJ-T-77-36B  
MTZJ-13  
MTZJ-30A  
MTZJ-33B  
MTZJ-7.5B  
RD10ESB2  
RD11ES-B2  
RD24ES-B1  
RD3.6ES-B1  
RD39ES-B2  
RD5.1ES-B2  
RD5.6ESB2  
11ES2



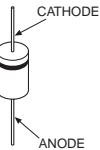
D10SBS4F  
D4SBS4-FA  
LN4SB60  
RBA-402LLF-AA



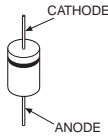
D10SC4M



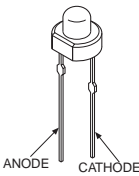
D2S4M



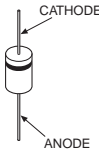
ERC06-15S  
ERD29-08J



SLR-325VCT31



1SS133T-77



## SECTION 7

### EXPLODED VIEWS

#### NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.

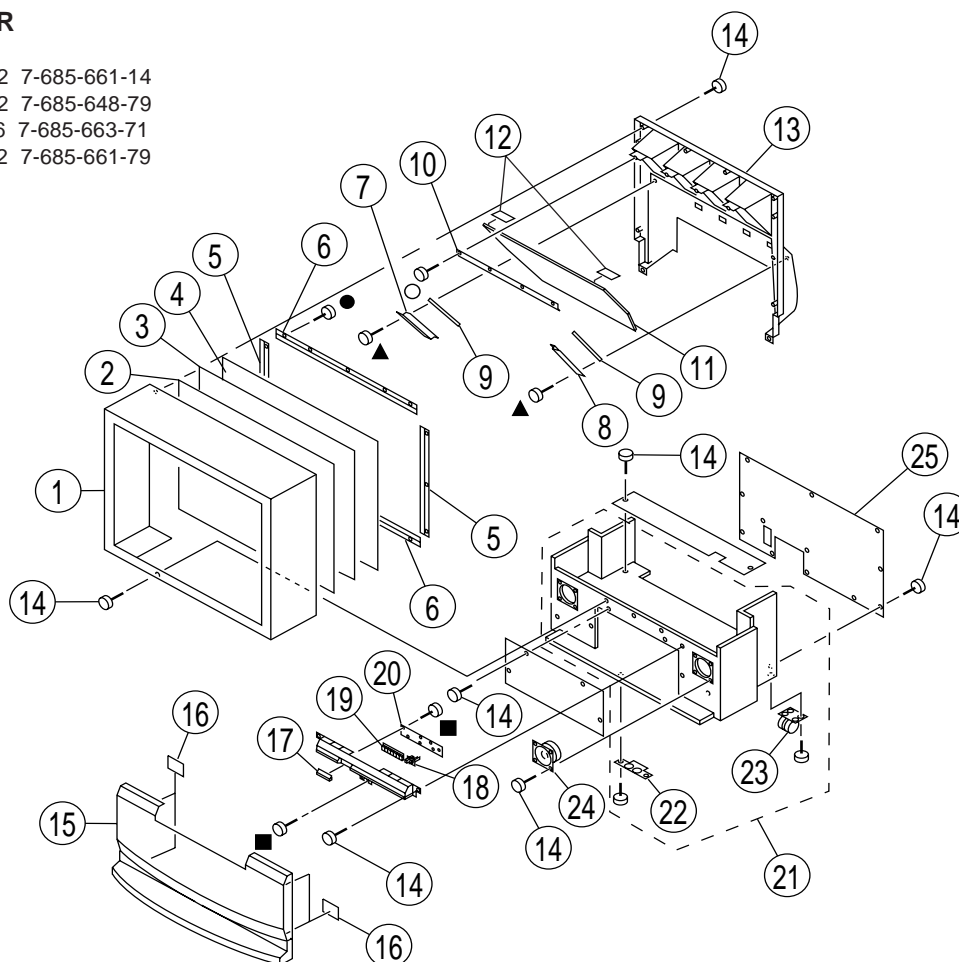
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

#### 7-1. COVER

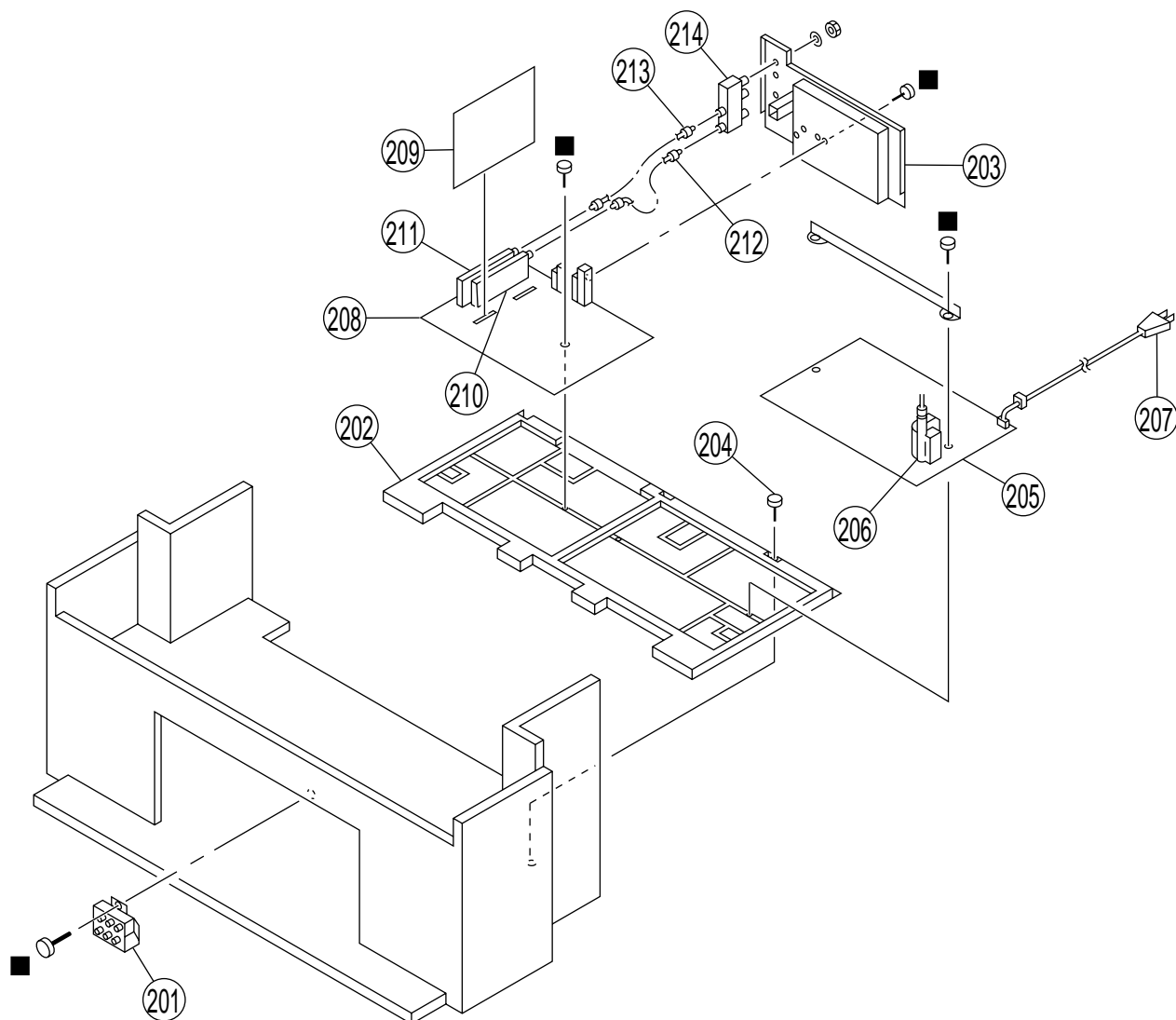
- : +BVTP 4X12 7-685-661-14
- : +BVTP 3X12 7-685-648-79
- ▲ : +BVTP 4X16 7-685-663-71
- : +BVTP 4X12 7-685-661-79



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4034-438-1	BEZNET ASSY (48)		14	4-378-522-31	SCREW (4X20), TAPPING	
2	4-064-651-01	SCREEN (48), CONTRAST		15	X-4035-410-2	GRILLE ASSY, SPEAKER	
3	4-063-555-01	PLATE (L), DIFFUSION		16	4-059-346-01	CUSHION, GRILLE	
4	4-058-455-11	PLATE (F), DIFFUSION		17	4-057-605-01	DOOR, CONTROL PANEL	
5	* 4-058-892-01	HOLDER (S), SCREEN		18	4-057-604-01	GUIDE, LED/IR	
6	* 4-058-893-01	HOLDER (L), SCREEN		19	4-057-603-11	BUTTON, MULTI	
7	* 4-051-790-02	HOLDER, MIRSD (L)		20	* A-1372-474-A	HA MOUNT (VAR)	
8	* 4-051-789-02	HOLDER, MIRSD (R)		21	* X-4035-414-1	CABINET ASSY, BOTTOM	22,23
9	* 4-049-098-01	CUSHION		22	4-048-175-01	FOOT, PLASTIC	
10	* 4-037-351-01	HOLDER, MIRROR		23	4-040-755-01	CASTER (DIA.30)	
11	4-058-545-01	MIRROR (48), REFLECTION		24	1-505-378-11	SPEAKER (10CM)	
12	7-600-003-52	BLACK ACETATE (2142) 46X50M		25	* 4-057-556-01	BOARD (48), REAR	
13	* 4-057-610-02	COVER, MIRROR					

## 7-2. CHASSIS

■ : +BVTP 3X12 7-685-648-79



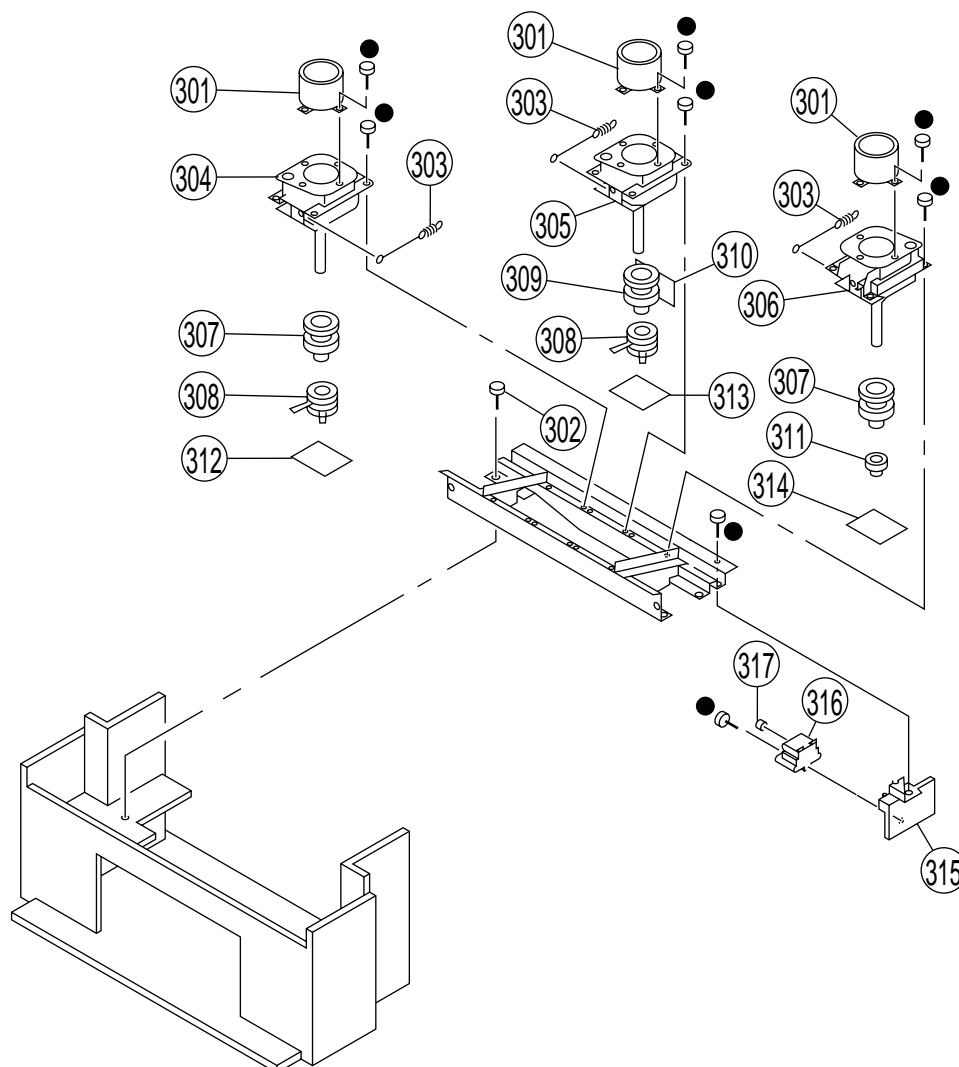
REF. NO.	PART NO.	DESCRIPTION	REMARK
201	$\triangle$ 1-223-925-11	RESISTOR ASSY (HIGH-VOLTAGE)	
202	* 4-057-594-01	BRACKET, MAIN	
203	4-057-595-21	TERMINAL BOARD	
204	4-052-894-01	SCREW (4X20), HEAD TAPPING	
205	* A-1316-367-A	G BOARD, COMPLETE	
206	$\triangle$ 1-453-238-11	TRANSFORMER ASSY, FLYBACK (NX/4007//X4A4)	
207	$\triangle$ 1-769-837-11	CORD, POWER (WITH NOISE FILTER)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
208	* A-1298-448-A	A BOARD, COMPLETE	
209	* A-1190-265-A	PT BOARD, COMPLETE	
210	8-598-339-00	TUNER BTF-LA402	
211	8-598-340-00	TUNER BTF-WA404	
212	* 1-557-056-31	CABLE, P-P	
213	1-556-945-21	CABLE, P-P	
214	8-598-414-00	ANTENNA SWITCH AS-2F	

The components identified by shading and mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

### 7-3. PICTURE TUBE

● : +BVTP 4X12 7-685-661-14



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
301	4-056-258-01	LENS (DELTA 78)		310	* A-1390-826-A	Z BOARD, COMPLETE	
302	4-052-894-01	SCREW (4X20), HEAD TAPPING		311	1-452-909-31	MAGNET ASSY, 4 POLE	
303	4-048-142-01	SPRING, TENSION		312	* A-1331-777-A	CR BOARD, COMPLETE	
304	$\triangle$ 8-733-553-05	PICTURE TUBE 07MXC3 (R)		313	* A-1331-778-A	CG BOARD, COMPLETE	
305	$\triangle$ 8-733-537-05	PICTURE TUBE 07MXC2 (G)		314	* A-1331-779-A	CB BOARD, COMPLETE	
306	$\triangle$ 8-733-528-05	PICTURE TUBE 07MAC3 (B) (GROUND SPRING)		315	* 4-057-596-01	BRACKET, HV	
307	$\triangle$ 1-451-455-31	DEFLECTION YOKE (R) (B)		316	$\triangle$ 8-598-955-30	BROCK ASSY, HIGH-VOLTAGE	
308	$\triangle$ 1-452-790-21	NECK ASSY		317	4-373-137-01	CAP (Z), RUBBER	
309	$\triangle$ 1-451-454-11	DEFLECTION YOKE (G)					

## SECTION 8

### ELECTRICAL PARTS LIST

#### NOTE:

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

• The components identified by  $\blacktriangle$  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

• Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

#### RESISTORS

- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

• CAPACITORS  
PF :  $\mu\text{F}$

• There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
* A-1190-265-A PT BOARD, COMPLETE *****				C5069	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
<CAPACITOR>				C5070	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5001	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V	C5071	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V
C5002	1-163-251-11	CERAMIC CHIP 100PF 5%	50V	C5072	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V
C5003	1-126-957-11	ELECT 0.22 $\mu\text{F}$ 20%	50V	C5073	1-164-005-11	CERAMIC CHIP 0.47 $\mu\text{F}$	25V
C5004	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5076	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C5005	1-163-017-00	CERAMIC CHIP 0.0047 $\mu\text{F}$ 10%	50V	C5077	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C5006	1-126-959-11	ELECT 0.47 $\mu\text{F}$ 20%	50V	C5078	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5007	1-126-961-11	ELECT 2.2 $\mu\text{F}$ 20%	50V	C5079	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V
C5008	1-126-963-11	ELECT 4.7 $\mu\text{F}$ 20%	50V	C5080	1-126-960-11	ELECT 1 $\mu\text{F}$ 20%	50V
C5009	1-163-005-11	CERAMIC CHIP 470PF 10%	50V	C5101	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V
C5010	1-126-934-11	ELECT 220 $\mu\text{F}$ 20%	16V	C5102	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5011	1-126-960-11	ELECT 1 $\mu\text{F}$ 20%	50V	C5103	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$	10% 50V
C5012	1-126-959-11	ELECT 0.47 $\mu\text{F}$ 20%	50V	C5104	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5013	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$ 10%	50V	C5105	1-163-227-11	CERAMIC CHIP 10PF 0.5PF	50V
C5014	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5106	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5015	1-163-229-11	CERAMIC CHIP 12PF 5%	50V	C5107	1-163-245-11	CERAMIC CHIP 56PF 5%	50V
C5016	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5108	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5017	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5109	1-126-964-11	ELECT 10 $\mu\text{F}$ 20%	50V
C5018	1-126-934-11	ELECT 220 $\mu\text{F}$ 20%	16V	C5110	1-126-964-11	ELECT 10 $\mu\text{F}$ 20%	50V
C5019	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5111	1-163-099-00	CERAMIC CHIP 18PF 5%	50V
C5020	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5112	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V
C5021	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5113	1-164-489-11	CERAMIC CHIP 0.22 $\mu\text{F}$ 10%	16V
C5022	1-163-259-91	CERAMIC CHIP 220PF 5%	50V	C5114	1-163-239-11	CERAMIC CHIP 33PF 5%	50V
C5023	1-126-964-11	ELECT 10 $\mu\text{F}$ 20%	50V	C5115	1-163-231-11	CERAMIC CHIP 15PF 5%	50V
C5024	1-126-933-11	ELECT 100 $\mu\text{F}$ 20%	16V	C5116	1-164-096-11	CERAMIC 0.01 $\mu\text{F}$	50V
C5025	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5117	1-163-809-11	CERAMIC CHIP 0.047 $\mu\text{F}$ 10%	25V
C5051	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5118	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$ 10%	50V
C5052	1-164-489-11	CERAMIC CHIP 0.22 $\mu\text{F}$ 10%	16V	C5119	1-164-096-11	CERAMIC 0.01 $\mu\text{F}$	50V
C5053	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V	C5120	1-163-231-11	CERAMIC CHIP 15PF 5%	50V
C5054	1-163-005-11	CERAMIC CHIP 470PF 10%	50V	C5121	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$ 10%	50V
C5055	1-164-346-11	CERAMIC CHIP 1 $\mu\text{F}$	16V	C5122	1-163-809-11	CERAMIC CHIP 0.047 $\mu\text{F}$ 10%	25V
C5057	1-163-001-11	CERAMIC CHIP 220PF 10%	50V	C5123	1-126-960-11	ELECT 1 $\mu\text{F}$ 20%	50V
C5058	1-163-038-11	CERAMIC CHIP 0.1 $\mu\text{F}$	25V	C5124	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$ 10%	50V
C5062	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V	C5125	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$ 10%	50V
C5063	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V	C5126	1-163-017-00	CERAMIC CHIP 0.0047 $\mu\text{F}$ 10%	50V
C5064	1-163-239-11	CERAMIC CHIP 33PF 5%	50V	C5127	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V
C5065	1-163-239-11	CERAMIC CHIP 33PF 5%	50V	C5129	1-163-038-11	CERAMIC CHIP 0.1 $\mu\text{F}$	25V
C5066	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V	C5130	1-104-664-11	ELECT 47 $\mu\text{F}$ 20%	25V
C5067	1-163-031-11	CERAMIC CHIP 0.01 $\mu\text{F}$	50V	C5131	1-163-021-91	CERAMIC CHIP 0.01 $\mu\text{F}$ 10%	50V
C5068	1-126-960-11	ELECT 1 $\mu\text{F}$ 20%	50V	C5132	1-163-231-11	CERAMIC CHIP 15PF 5%	50V
				C5133	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V
				C5134	1-163-038-91	CERAMIC CHIP 0.1 $\mu\text{F}$	25V



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REF. NO.	PART NO.	DESCRIPTION	REMARK
R5013	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R5014	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5015	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5016	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5017	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R5018	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R5019	1-216-037-00	METAL GLAZE	330 5% 1/10W
R5021	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5022	1-216-047-91	METAL GLAZE	820 5% 1/10W
R5023	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5024	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5025	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R5026	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R5027	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5033	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5051	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R5052	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5053	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W
R5054	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W
R5055	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5056	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R5057	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5058	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5059	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5060	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5061	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W
R5062	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5063	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5072	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R5073	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5074	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R5075	1-216-043-91	METAL GLAZE	560 5% 1/10W
R5076	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R5077	1-216-045-00	METAL GLAZE	680 5% 1/10W
R5078	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5079	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5080	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5081	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5082	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5084	1-216-033-00	METAL GLAZE	220 5% 1/10W
R5085	1-216-033-00	METAL GLAZE	220 5% 1/10W
R5089	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R5090	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5091	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5092	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5102	1-216-295-91	CONDUCTOR, CHIP	
R5103	1-216-047-91	METAL GLAZE	820 5% 1/10W
R5104	1-216-295-91	CONDUCTOR, CHIP	
R5106	1-216-035-00	METAL GLAZE	270 5% 1/10W
R5107	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R5108	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W
R5109	1-208-776-11	METAL CHIP	560 0.50% 1/10W
R5110	1-208-774-11	METAL CHIP	470 0.50% 1/10W
R5112	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5113	1-216-043-91	METAL GLAZE	560 5% 1/10W
R5114	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R5115	1-216-049-91	METAL GLAZE	1K 5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R5116	1-216-043-91	METAL GLAZE	560 5% 1/10W
R5117	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5118	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R5120	1-208-766-11	METAL CHIP	220 0.50% 1/10W
R5121	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5122	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R5124	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5127	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R5128	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R5129	1-216-043-91	METAL GLAZE	560 5% 1/10W
R5130	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R5132	1-216-043-91	METAL GLAZE	560 5% 1/10W
R5133	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R5134	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R5135	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R5136	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R5137	1-208-766-11	METAL CHIP	220 0.50% 1/10W
R5138	1-208-794-11	METAL CHIP	3.3K 0.50% 1/10W
R5139	1-208-794-11	METAL CHIP	3.3K 0.50% 1/10W
R5140	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5141	1-216-033-00	METAL GLAZE	220 5% 1/10W
R5142	1-216-041-00	METAL GLAZE	470 5% 1/10W
R5143	1-216-033-00	METAL GLAZE	220 5% 1/10W
R5144	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R5145	1-216-035-00	METAL GLAZE	270 5% 1/10W
R5146	1-216-035-00	METAL GLAZE	270 5% 1/10W
R5147	1-208-788-11	METAL CHIP	1.8K 0.50% 1/10W
R5148	1-208-788-11	METAL CHIP	1.8K 0.50% 1/10W
R5149	1-216-043-91	METAL GLAZE	560 5% 1/10W
R5150	1-208-794-11	METAL CHIP	3.3K 0.50% 1/10W
R5151	1-208-794-11	METAL CHIP	3.3K 0.50% 1/10W
R5152	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5156	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5157	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5158	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5159	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5160	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5161	1-216-025-91	METAL GLAZE	100 5% 1/10W
R5163	1-216-025-91	METAL GLAZE	100 5% 1/10W
<CRYSTAL>			
X5001	1-577-611-11	OSCILALTOR, CERAMIC	
X5002	1-567-505-11	OSCILLATOR, CRYSTAL	
X5051	1-760-095-21	VIBRATOR, CRYSTAL	
X5101	1-567-878-11	VIBRATOR, CRYSTAL	
X5102	1-577-611-11	OSCILALTOR, CERAMIC	

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\* A-1298-448-A A BOARD, COMPLETE  
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\* 4-051-927-01 CASE, SHIELD  
4-382-854-11 SCREW (M3X10), P, SW (+)





REF. NO.	PART NO.	DESCRIPTION				REMARK	REF. NO.	PART NO.	DESCRIPTION				REMARK
<CAPACITOR>							C229	1-126-964-11	ELECT	10μF	20%	50V	
C001	1-163-031-11	CERAMIC CHIP	0.01μF		50V		C230	1-126-964-11	ELECT	10μF	20%	50V	
C004	1-126-933-11	ELECT	100μF	20%	16V		C231	1-126-933-11	ELECT	100μF	20%	16V	
C005	1-126-964-11	ELECT	10μF	20%	50V		C232	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
C006	1-163-031-11	CERAMIC CHIP	0.01μF		50V		C302	1-126-959-11	ELECT	0.47μF	20%	50V	
C017	1-163-809-11	CERAMIC CHIP	0.047μF	10%	25V		C303	1-163-031-11	CERAMIC CHIP	0.01μF		50V	
							C304	1-126-964-11	ELECT	10μF	20%	50V	
C018	1-163-259-91	CERAMIC CHIP	220PF	5%	50V		C305	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	
C019	1-126-960-11	ELECT	1μF	20%	50V		C308	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
C021	1-163-243-11	CERAMIC CHIP	47PF	5%	50V		C309	1-126-933-11	ELECT	100μF	20%	16V	
C024	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V								
C025	1-163-031-11	CERAMIC CHIP	0.01μF		50V		C310	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C026	1-107-714-11	ELECT	10μF	20%	16V		C311	1-115-419-11	CERAMIC CHIP	3300PF	5%	25V	
C027	1-126-935-11	ELECT	470μF	20%	16V		C312	1-126-959-11	ELECT	0.47μF	20%	50V	
C028	1-107-714-11	ELECT	10μF	20%	16V		C313	1-130-495-00	FILM	0.1μF	5%	50V	
C032	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V		C314	1-130-495-00	FILM	0.1μF	5%	50V	
C033	1-163-259-91	CERAMIC CHIP	220PF	5%	50V		C315	1-130-495-00	FILM	0.1μF	5%	50V	
							C316	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
C034	1-163-809-11	CERAMIC CHIP	0.047μF	10%	25V		C317	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
C035	1-104-664-11	ELECT	47μF	20%	25V		C318	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
C036	1-163-231-11	CERAMIC CHIP	15PF	5%	50V		C319	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
C037	1-163-237-11	CERAMIC CHIP	27PF	5%	50V								
C038	1-126-960-11	ELECT	1μF	20%	50V		C320	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
							C321	1-126-963-11	ELECT	4.7μF	20%	50V	
C045	1-163-017-00	CERAMIC CHIP	0.0047μF	10%	50V		C322	1-130-495-00	MYLAR	0.1μF	5%	50V	
C046	1-163-031-11	CERAMIC CHIP	0.01μF		50V		C323	1-137-581-11	FILM	0.1μF	5%	100V	
C047	1-163-010-11	CERAMIC CHIP	0.0012μF	10%	50V		C324	1-164-182-11	CERAMIC CHIP	0.0033μF	10%	50V	
C048	1-164-005-11	CERAMIC CHIP	0.47μF		25V								
C054	1-163-033-91	CERAMIC CHIP	0.022μF		50V		C325	1-126-959-11	ELECT	0.47μF	20%	50V	
							C326	1-126-964-11	ELECT	10μF	20%	50V	
C057	1-163-259-91	CERAMIC CHIP	220PF	5%	50V		C329	1-163-017-00	CERAMIC CHIP	0.0047μF	10%	50V	
C092	1-163-259-91	CERAMIC CHIP	220PF	5%	50V		C330	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C107	1-163-031-11	CERAMIC CHIP	0.01μF		50V		C331	1-126-959-11	ELECT	0.47μF	20%	50V	
C108	1-104-664-11	ELECT	47μF	20%	25V								
C109	1-126-916-11	ELECT	1000μF	20%	6.3V		C332	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
							C333	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
C110	1-163-231-11	CERAMIC CHIP	15PF	5%	50V		C334	1-163-275-11	CERAMIC CHIP	0.001μF	5%	50V	
C111	1-163-229-11	CERAMIC CHIP	12PF	5%	50V		C335	1-126-935-11	ELECT	470μF	20%	16V	
C119	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V		C337	1-126-960-11	ELECT	1μF	20%	50V	
C120	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V								
C121	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V		C338	1-126-961-11	ELECT	2.2μF	20%	50V	
							C339	1-126-959-11	ELECT	0.47μF	20%	50V	
C124	1-163-031-11	CERAMIC CHIP	0.01μF		50V		C342	1-130-495-00	FILM	0.1μF	5%	50V	
C201	1-126-960-11	ELECT	1μF	20%	50V		C344	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C203	1-126-935-11	ELECT	470μF	20%	16V		C345	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C204	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V								
C206	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V		C349	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	
							C351	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
C207	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V		C401	1-126-964-11	ELECT	10μF	20%	50V	
C208	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V		C402	1-126-964-11	ELECT	10μF	20%	50V	
C209	1-126-964-11	ELECT	10μF	20%	50V		C403	1-137-367-11	FILM	0.0033μF	5%	50V	
C210	1-126-964-11	ELECT	10μF	20%	50V								
C211	1-126-964-11	ELECT	10μF	20%	50V		C404	1-137-367-11	FILM	0.0033μF	5%	50V	
							C405	1-137-372-11	FILM	0.022μF	5%	50V	
C212	1-126-964-11	ELECT	10μF	20%	50V		C406	1-130-495-00	FILM	0.1μF	5%	50V	
C213	1-126-964-11	ELECT	10μF	20%	50V		C407	1-126-960-11	ELECT	1μF	20%	50V	
C216	1-126-964-11	ELECT	10μF	20%	50V		C408	1-137-367-11	FILM	0.0033μF	5%	50V	
C218	1-163-031-11	CERAMIC CHIP	0.01μF		50V								
C219	1-126-964-11	ELECT	10μF	20%	50V		C409	1-137-367-11	FILM	0.0033μF	5%	50V	
							C410	1-137-372-11	FILM	0.022μF	5%	50V	
C220	1-126-964-11	ELECT	10μF	20%	50V		C411	1-130-495-00	FILM	0.1μF	5%	50V	
C221	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V		C412	1-126-933-11	ELECT	100μF	20%	16V	
C224	1-104-664-11	ELECT	47μF	20%	25V		C413	1-128-551-11	ELECT	22μF	20%	25V	
C226	1-126-964-11	ELECT	10μF	20%	50V								
C227	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V		C414	1-163-038-11	CERAMIC CHIP	0.1μF		25V	
							C415	1-126-964-11	ELECT	10μF	20%	50V	



REF. NO.	PART NO.	DESCRIPTION	REMARK
C416	1-126-964-11	ELECT	10μF 20% 50V
C417	1-126-964-11	ELECT	10μF 20% 50V
C418	1-104-664-11	ELECT	47μF 20% 25V
C419	1-128-551-11	ELECT	22μF 20% 25V
C422	1-104-664-11	ELECT	47μF 20% 25V
C424	1-126-961-11	ELECT	2.2μF 20% 50V
C425	1-126-935-11	ELECT	470μF 20% 16V
C426	1-126-964-11	ELECT	10μF 20% 50V
C427	1-126-933-11	ELECT	100μF 20% 16V
C428	1-126-969-11	ELECT	220μF 20% 50V
C429	1-126-967-11	ELECT	47μF 20% 50V
C430	1-126-964-11	ELECT	10μF 20% 50V
C431	1-126-969-11	ELECT	220μF 20% 50V
C432	1-136-173-00	FILM	0.47μF 5% 50V
C433	1-130-495-00	FILM	0.1μF 5% 50V
C434	1-128-550-11	ELECT	2200μF 20% 50V
C435	1-130-495-00	FILM	0.1μF 5% 50V
C436	1-128-548-11	ELECT	4700μF 20% 25V
C437	1-128-548-11	ELECT	4700μF 20% 25V
C440	1-126-964-11	ELECT	10μF 20% 50V
C441	1-126-964-11	ELECT	10μF 20% 50V
C1101	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1102	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1103	1-126-933-11	ELECT	100μF 20% 16V
C1104	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V
C1105	1-126-960-11	ELECT	1μF 20% 50V
C1106	1-126-933-11	ELECT	100μF 20% 16V
C1107	1-104-664-11	ELECT	47μF 20% 25V
C1108	1-126-964-11	ELECT	10μF 20% 50V
C1109	1-126-933-11	ELECT	100μF 20% 16V
C1110	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V
C1111	1-126-960-11	ELECT	1μF 20% 50V
C1112	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1113	1-126-964-11	ELECT	10μF 20% 50V
C1114	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1115	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1116	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1117	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1118	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1119	1-126-968-11	ELECT	100μF 20% 50V
C1120	1-126-933-11	ELECT	100μF 20% 16V
C1122	1-104-664-11	ELECT	47μF 20% 25V
C1501	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V
C1502	1-107-504-11	CERAMIC	10PF 0.5PF 500V
C1503	1-136-177-00	FILM	1μF 5% 50V
C1506	1-126-969-11	ELECT	220μF 20% 50V
C1507	1-163-243-11	CERAMIC CHIP	47PF 5% 50V
C1508	1-137-401-11	FILM	0.22μF 10% 100V
C1509	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C1510	1-126-942-61	ELECT	1000μF 20% 25V
C1511	1-126-942-61	ELECT	1000μF 20% 25V
C1513	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1514	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1517	1-126-964-11	ELECT	10μF 20% 50V
C1518	1-126-933-11	ELECT	100μF 20% 16V
C1519	1-126-933-11	ELECT	100μF 20% 16V
C1520	1-126-964-11	ELECT	10μF 20% 50V

REF. NO.	PART NO.	DESCRIPTION	REMARK
C1521	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V
C1522	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V
C1523	1-163-005-11	CERAMIC CHIP	470PF 10% 50V
C1524	1-137-150-11	MYLAR	0.01μF 10% 100V
C1525	1-106-220-00	MYLAR	0.1μF 10% 100V
C1601	1-126-935-11	ELECT	470μF 20% 16V
C1602	1-126-767-11	ELECT	1000μF 20% 16V
C1603	1-126-916-11	ELECT	1000μF 20% 6.3V
C1604	1-126-934-11	ELECT	220μF 20% 16V
C1605	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1606	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1607	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1608	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1609	1-163-031-11	CERAMIC CHIP	0.01μF 50V
C1610	1-126-933-11	ELECT	100μF 20% 16V
C1611	1-163-031-11	CERAMIC CHIP	0.01μF 50V
<CONNECTOR>			
CN001	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN002	* 1-564-511-11	PLUG, CONNECTOR 8P	
CN003	* 1-774-183-11	CONNECTOR, BOARD TOBOARD10P	
CN004	1-573-979-21	CONNECTOR, BOARD TO BOARD 11P	
CN301	* 1-774-183-11	CONNECTOR, BOARD TOBOARD10P	
CN302	* 1-564-508-11	PLUG, CONNECTOR 5P	
CN303	* 1-564-512-11	PLUG, CONNECTOR 9P	
CN304	1-770-155-21	CONNECTOR, BOARD TO BOARD 8P	
CN305	1-573-298-21	CONNECTOR, BOARD TO BOARD 20P	
CN401	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN402	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN403	1-695-915-11	TAB (CONTACT)	
CN1101	* 1-564-514-11	PLUG, CONNECTOR 11P	
CN1501	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN1601	* 1-774-183-11	CONNECTOR, BOARD TOBOARD10P	
CN1602	* 1-774-183-11	CONNECTOR, BOARD TOBOARD10P	
<DIODE>			
D001	8-719-991-33	DIODE 1SS133T-77	
D002	8-719-991-33	DIODE 1SS133T-77	
D003	8-719-991-33	DIODE 1SS133T-77	
D004	8-719-991-33	DIODE 1SS133T-77	
D007	8-719-109-89	DIODE RD5.6ESB2	
D010	8-719-109-89	DIODE RD5.6ESB2	
D011	8-719-109-89	DIODE RD5.6ESB2	
D202	8-719-110-17	DIODE RD10ESB2	
D203	8-719-109-89	DIODE RD5.6ESB2	
D206	8-719-977-28	DIODE DTZ10B	
D207	8-719-977-28	DIODE DTZ10B	
D208	8-719-977-28	DIODE DTZ10B	
D209	8-719-977-28	DIODE DTZ10B	
D210	8-719-977-28	DIODE DTZ10B	
D211	8-719-977-28	DIODE DTZ10B	
D212	8-719-977-28	DIODE DTZ10B	
D213	8-719-977-28	DIODE DTZ10B	
D214	8-719-110-17	DIODE RD10ESB2	
D215	8-719-110-17	DIODE RD10ESB2	
D216	8-719-110-17	DIODE RD10ESB2	



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D217	8-719-110-17	DIODE RD10ESB2		J206	1-774-749-11	JACK BLOCK, PIN	
D218	8-719-110-17	DIODE RD10ESB2		J208	1-774-749-11	JACK BLOCK, PIN	
D219	8-719-110-17	DIODE RD10ESB2		J209	1-774-751-11	TERMINAL BLOCK, S	
D220	8-719-110-17	DIODE RD10ESB2					
D221	8-719-110-17	DIODE RD10ESB2					
						<CHIP CONDUCTOR>	
D222	8-719-110-17	DIODE RD10ESB2		JR003	1-216-295-91	CONDUCTOR, CHIP	
D225	8-719-110-17	DIODE RD10ESB2		JR201	1-216-295-91	CONDUCTOR, CHIP	
D226	8-719-110-17	DIODE RD10ESB2		JR202	1-216-295-91	CONDUCTOR, CHIP	
D232	8-719-983-38	DIODE MTZJ-T-77-36B		JR1501	1-216-295-91	CONDUCTOR, CHIP	
D236	8-719-110-17	DIODE RD10ESB2		JR1502	1-216-295-91	CONDUCTOR, CHIP	
D237	8-719-110-17	DIODE RD10ESB2		JR1601	1-216-295-91	CONDUCTOR, CHIP	
D238	8-719-110-17	DIODE RD10ESB2		JR1602	1-216-295-91	CONDUCTOR, CHIP	
D239	8-719-991-33	DIODE 1SS133T-77		JR1603	1-216-295-91	CONDUCTOR, CHIP	
D240	8-719-991-33	DIODE 1SS133T-77		JR1604	1-216-295-91	CONDUCTOR, CHIP	
D241	8-719-991-33	DIODE 1SS133T-77		JR1605	1-216-295-91	CONDUCTOR, CHIP	
D305	8-719-110-17	DIODE RD10ESB2		JR1607	1-216-295-91	CONDUCTOR, CHIP	
D401	8-719-991-33	DIODE 1SS133T-77		JR1609	1-216-295-91	CONDUCTOR, CHIP	
D403	8-719-983-38	DIODE MTZJ-T-77-36B		JR1610	1-216-295-91	CONDUCTOR, CHIP	
D405	8-719-991-33	DIODE 1SS133T-77		JR1611	1-216-295-91	CONDUCTOR, CHIP	
D406	8-719-991-33	DIODE 1SS133T-77		JR1612	1-216-295-91	CONDUCTOR, CHIP	
D408	8-719-991-33	DIODE 1SS133T-77		JR1613	1-216-295-91	CONDUCTOR, CHIP	
D410	8-719-983-38	DIODE MTZJ-T-77-36B		JR1614	1-216-295-91	CONDUCTOR, CHIP	
D411	8-719-929-15	DIODE HZS9.1NB2		JR1615	1-216-295-91	CONDUCTOR, CHIP	
D1101	8-719-982-26	DIODE MTZJ-33B		JR1617	1-216-295-91	CONDUCTOR, CHIP	
D1102	8-719-977-28	DIODE DTZ10B		JR1619	1-216-295-91	CONDUCTOR, CHIP	
D1103	8-719-977-28	DIODE DTZ10B		JR1620	1-216-295-91	CONDUCTOR, CHIP	
D1104	8-719-977-28	DIODE DTZ10B		JR1621	1-216-295-91	CONDUCTOR, CHIP	
D1105	8-719-977-28	DIODE DTZ10B		JR1622	1-216-295-91	CONDUCTOR, CHIP	
D1106	8-719-977-28	DIODE DTZ10B		JR1623	1-216-295-91	CONDUCTOR, CHIP	
D1107	8-719-977-28	DIODE DTZ10B		JR1624	1-216-295-91	CONDUCTOR, CHIP	
D1501	8-719-109-89	DIODE RD5.6ESB2		JR1625	1-216-295-91	CONDUCTOR, CHIP	
D1502	8-719-908-03	DIODE GP08D		JR1627	1-216-295-91	CONDUCTOR, CHIP	
				JR1629	1-216-295-91	CONDUCTOR, CHIP	
		<FERRITE BEAD>					
FB1102	1-414-135-11	FERRITE	0μH			<COIL>	
		<IC>		L002	1-410-482-31	INDUCTOR	100μH
IC001	8-752-894-96	IC CXP85856A-009S		L003	1-410-482-31	INDUCTOR	100μH
IC002	8-752-861-57	IC CXP85112B-613S		L004	1-216-295-91	CONDUCTOR, CHIP	
IC003	8-759-352-91	IC PST9143NL		L005	1-216-295-91	CONDUCTOR, CHIP	
IC004	8-759-352-91	IC PST9143NL		L006	1-410-470-11	INDUCTOR	10μH
IC007	8-759-518-23	IC X24C04S8					
				L007	1-410-482-31	INDUCTOR	100μH
IC201	8-759-534-81	IC MM1313AD/		L201	1-410-478-11	INDUCTOR	47μH
IC301	8-752-076-76	IC CXA2025AS		L302	1-410-482-31	INDUCTOR	100μH
IC401	8-759-369-39	IC BH3856FS-E2		L303	1-410-470-11	INDUCTOR	10μH
IC402	8-759-100-96	IC UPC4558G2		L1101	1-410-478-11	INDUCTOR	47μH
IC403	8-759-089-13	IC TDA7262					
				L1103	1-410-478-11	INDUCTOR	47μH
IC1101	8-759-231-53	IC TA7805S		L1104	1-410-478-11	INDUCTOR	47μH
IC1501	8-759-192-71	IC STV9379		L1105	1-410-470-11	INDUCTOR	10μH
IC1502	8-759-251-31	IC CA0007AM		L1106	1-410-478-11	INDUCTOR	47μH
IC1601	8-759-198-03	IC PQ09RF21		L1501	1-406-663-21	INDUCTOR	0μH
IC1602	8-759-231-53	IC TA7805S					
				L1502	1-412-533-21	INDUCTOR	47μH
		<JACK>		L1503	1-412-533-21	INDUCTOR	47μH
J203	1-507-667-00	JACK, MIC		L1601	1-406-975-21	INDUCTOR	0μH
J205	1-774-750-11	JACK BLOCK, PIN					



REF. NO.	PART NO.	DESCRIPTION	REMARK
<IC LINK>			
PS401	1-532-984-11	LINK, IC 2A/90V	
<TRANSISTOR>			
Q001	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q002	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q003	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q004	8-729-216-22	TRANSISTOR 2SA1162-G	
Q005	8-729-216-22	TRANSISTOR 2SA1162-G	
Q006	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q007	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q008	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q009	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q013	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q015	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q016	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q017	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q201	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q206	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q207	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q209	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q213	8-729-216-22	TRANSISTOR 2SA1162-G	
Q214	8-729-216-22	TRANSISTOR 2SA1162-G	
Q216	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q217	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q218	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q219	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q220	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q226	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q303	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q304	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q305	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q306	8-729-216-22	TRANSISTOR 2SA1162-G	
Q307	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q308	8-729-216-22	TRANSISTOR 2SA1162-G	
Q311	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q312	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q313	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q314	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q402	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q403	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q405	8-729-216-22	TRANSISTOR 2SA1162-G	
Q406	8-729-216-22	TRANSISTOR 2SA1162-G	
Q408	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q409	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q410	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q411	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q1101	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q1501	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q2105	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q2106	8-729-422-27	TRANSISTOR 2SD601A-Q	

REF. NO.	PART NO.	DESCRIPTION	REMARK
<RESISTOR>			
R003	1-216-295-91	CONDUCTOR, CHIP	
R004	1-216-033-00	METAL GLAZE 220	5% 1/10W
R005	1-216-033-00	METAL GLAZE 220	5% 1/10W
R006	1-216-033-00	METAL GLAZE 220	5% 1/10W
R007	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R008	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R009	1-216-033-00	METAL GLAZE 220	5% 1/10W
R010	1-216-033-00	METAL GLAZE 220	5% 1/10W
R011	1-216-033-00	METAL GLAZE 220	5% 1/10W
R012	1-216-033-00	METAL GLAZE 220	5% 1/10W
R013	1-216-033-00	METAL GLAZE 220	5% 1/10W
R014	1-216-033-00	METAL GLAZE 220	5% 1/10W
R015	1-216-025-91	METAL GLAZE 100	5% 1/10W
R016	1-216-025-91	METAL GLAZE 100	5% 1/10W
R017	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R018	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R019	1-216-097-91	METAL GLAZE 100K	5% 1/10W
R020	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R021	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R023	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R024	1-216-121-91	METAL GLAZE 1M	5% 1/10W
R025	1-216-097-91	METAL GLAZE 100K	5% 1/10W
R026	1-216-033-00	METAL GLAZE 220	5% 1/10W
R027	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R030	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R033	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R034	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R035	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R036	1-216-033-00	METAL GLAZE 220	5% 1/10W
R037	1-216-033-00	METAL GLAZE 220	5% 1/10W
R038	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R039	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R040	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R041	1-216-025-91	METAL GLAZE 100	5% 1/10W
R042	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R043	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R045	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R046	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R047	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R048	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R050	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R053	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R054	1-216-033-00	METAL GLAZE 220	5% 1/10W
R056	1-216-121-91	METAL GLAZE 1M	5% 1/10W
R057	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R058	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R059	1-216-033-00	METAL GLAZE 220	5% 1/10W
R060	1-216-033-00	METAL GLAZE 220	5% 1/10W
R061	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R063	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R064	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R065	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R066	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R067	1-216-033-00	METAL GLAZE 220	5% 1/10W
R068	1-216-033-00	METAL GLAZE 220	5% 1/10W





REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R070	1-216-033-00	METAL GLAZE 220	5% 1/10W	R213	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R071	1-216-033-00	METAL GLAZE 220	5% 1/10W	R214	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R072	1-216-033-00	METAL GLAZE 220	5% 1/10W	R215	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R073	1-216-033-00	METAL GLAZE 220	5% 1/10W				
R074	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R216	1-216-113-00	METAL GLAZE 470K	5% 1/10W
				R217	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R075	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R218	1-216-022-00	METAL GLAZE 75	5% 1/10W
R076	1-216-033-00	METAL GLAZE 220	5% 1/10W	R219	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R077	1-216-121-91	METAL GLAZE 1M	5% 1/10W	R220	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R078	1-216-097-91	METAL GLAZE 100K	5% 1/10W				
R080	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R221	1-216-022-00	METAL GLAZE 75	5% 1/10W
				R222	1-216-022-00	METAL GLAZE 75	5% 1/10W
R081	1-216-033-00	METAL GLAZE 220	5% 1/10W	R223	1-216-022-00	METAL GLAZE 75	5% 1/10W
R084	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R224	1-216-017-91	METAL GLAZE 47	5% 1/10W
R085	1-216-097-91	METAL GLAZE 100K	5% 1/10W	R225	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R086	1-216-033-00	METAL GLAZE 220	5% 1/10W				
R087	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R227	1-216-019-00	METAL GLAZE 56	5% 1/10W
				R229	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R088	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W	R230	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R090	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W	R231	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R091	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R235	1-216-041-00	METAL GLAZE 470	5% 1/10W
R092	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W				
R099	1-216-037-00	METAL GLAZE 330	5% 1/10W	R236	1-216-041-00	METAL GLAZE 470	5% 1/10W
				R241	1-216-041-00	METAL GLAZE 470	5% 1/10W
R111	1-216-033-00	METAL GLAZE 220	5% 1/10W	R245	1-216-041-00	METAL GLAZE 470	5% 1/10W
R112	1-216-033-00	METAL GLAZE 220	5% 1/10W	R255	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R113	1-216-033-00	METAL GLAZE 220	5% 1/10W	R258	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R115	1-216-033-00	METAL GLAZE 220	5% 1/10W				
R117	1-216-033-00	METAL GLAZE 220	5% 1/10W	R260	1-216-073-00	METAL GLAZE 10K	5% 1/10W
				R261	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R118	1-216-033-00	METAL GLAZE 220	5% 1/10W	R262	1-216-095-00	METAL GLAZE 82K	5% 1/10W
R119	1-216-033-00	METAL GLAZE 220	5% 1/10W	R263	1-216-095-00	METAL GLAZE 82K	5% 1/10W
R120	1-216-033-00	METAL GLAZE 220	5% 1/10W	R264	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R121	1-216-033-00	METAL GLAZE 220	5% 1/10W				
R122	1-216-033-00	METAL GLAZE 220	5% 1/10W	R265	1-216-097-91	METAL GLAZE 100K	5% 1/10W
				R266	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R123	1-216-033-00	METAL GLAZE 220	5% 1/10W	R268	1-216-105-91	METAL GLAZE 220K	5% 1/10W
R124	1-216-033-00	METAL GLAZE 220	5% 1/10W	R275	1-216-033-00	METAL GLAZE 220	5% 1/10W
R125	1-216-033-00	METAL GLAZE 220	5% 1/10W	R276	1-216-033-00	METAL GLAZE 220	5% 1/10W
R127	1-216-033-00	METAL GLAZE 220	5% 1/10W				
R128	1-216-033-00	METAL GLAZE 220	5% 1/10W	R277	1-216-025-91	METAL GLAZE 100	5% 1/10W
				R278	1-216-025-91	METAL GLAZE 100	5% 1/10W
R131	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W	R279	1-216-025-91	METAL GLAZE 100	5% 1/10W
R132	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W	R280	1-216-041-00	METAL GLAZE 470	5% 1/10W
R133	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W	R281	1-216-041-00	METAL GLAZE 470	5% 1/10W
R147	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W				
R148	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R282	1-216-041-00	METAL GLAZE 470	5% 1/10W
				R283	1-216-041-00	METAL GLAZE 470	5% 1/10W
R149	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R284	1-216-041-00	METAL GLAZE 470	5% 1/10W
R154	1-216-025-91	METAL GLAZE 100	5% 1/10W	R285	1-216-041-00	METAL GLAZE 470	5% 1/10W
R155	1-216-025-91	METAL GLAZE 100	5% 1/10W	R286	1-216-025-91	METAL GLAZE 100	5% 1/10W
R156	1-216-113-00	METAL GLAZE 470K	5% 1/10W				
R157	1-216-017-91	METAL GLAZE 47	5% 1/10W	R287	1-216-025-91	METAL GLAZE 100	5% 1/10W
				R288	1-216-025-91	METAL GLAZE 100	5% 1/10W
R158	1-216-113-00	METAL GLAZE 470K	5% 1/10W	R289	1-216-025-91	METAL GLAZE 100	5% 1/10W
R159	1-216-017-91	METAL GLAZE 47	5% 1/10W	R290	1-216-025-91	METAL GLAZE 100	5% 1/10W
R160	1-216-113-00	METAL GLAZE 470K	5% 1/10W	R291	1-216-025-91	METAL GLAZE 100	5% 1/10W
R161	1-216-017-91	METAL GLAZE 47	5% 1/10W				
R163	1-216-033-00	METAL GLAZE 220	5% 1/10W	R294	1-216-043-91	METAL GLAZE 560	5% 1/10W
				R295	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R164	1-216-033-00	METAL GLAZE 220	5% 1/10W	R296	1-216-025-91	METAL GLAZE 100	5% 1/10W
R165	1-216-033-00	METAL GLAZE 220	5% 1/10W	R297	1-216-093-00	METAL GLAZE 68K	5% 1/10W
R171	1-216-035-00	METAL GLAZE 270	5% 1/10W	R299	1-216-041-00	METAL GLAZE 470	5% 1/10W
R172	1-216-035-00	METAL GLAZE 270	5% 1/10W				
R173	1-216-035-00	METAL GLAZE 270	5% 1/10W	R301	1-216-041-00	METAL GLAZE 470	5% 1/10W
				R302	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R204	1-249-377-11	CARBON 0.47	5% 1/4W F	R303	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R206	1-216-022-00	METAL GLAZE 75	5% 1/10W	R304	1-216-049-91	METAL GLAZE 1K	5% 1/10W



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R305	1-216-033-00	METAL GLAZE 220	5% 1/10W	R374	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R306	1-216-025-91	METAL GLAZE 100	5% 1/10W	R375	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R307	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R376	1-216-129-00	METAL GLAZE 2.2M	5% 1/10W
R308	1-216-017-91	METAL GLAZE 47	5% 1/10W	R377	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R309	1-216-017-91	METAL GLAZE 47	5% 1/10W	R378	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R310	1-216-017-91	METAL GLAZE 47	5% 1/10W	R379	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R314	1-216-033-00	METAL GLAZE 220	5% 1/10W	R380	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R315	1-216-033-00	METAL GLAZE 220	5% 1/10W	R381	1-216-097-91	METAL GLAZE 100K	5% 1/10W
R319	1-216-033-00	METAL GLAZE 220	5% 1/10W	R384	1-249-377-11	CARBON 0.47	5% 1/4W F
R320	1-216-033-00	METAL GLAZE 220	5% 1/10W	R401	1-249-377-11	CARBON 0.47	5% 1/4W F
R322	1-216-077-00	METAL GLAZE 15K	5% 1/10W	R402	1-249-377-11	CARBON 0.47	5% 1/4W F
R323	1-216-025-91	METAL GLAZE 100	5% 1/10W	R403	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R324	1-216-025-91	METAL GLAZE 100	5% 1/10W	R404	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R325	1-216-025-91	METAL GLAZE 100	5% 1/10W	R406	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R326	1-208-786-11	METAL GLAZE 1.5K	0.50% 1/10W	R407	1-216-025-91	METAL GLAZE 100	5% 1/10W
R327	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R408	1-216-025-91	METAL GLAZE 100	5% 1/10W
R328	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R412	1-216-025-91	METAL GLAZE 100	5% 1/10W
R330	1-216-025-91	METAL GLAZE 100	5% 1/10W	R413	1-216-025-91	METAL GLAZE 100	5% 1/10W
R331	1-216-025-91	METAL GLAZE 100	5% 1/10W	R414	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R332	1-216-035-00	METAL GLAZE 270	5% 1/10W	R415	1-216-041-00	METAL GLAZE 470	5% 1/10W
R333	1-208-810-11	METAL GLAZE 15K	0.50% 1/10W	R416	1-216-041-00	METAL GLAZE 470	5% 1/10W
R334	1-216-043-91	METAL GLAZE 560	5% 1/10W	R418	1-216-025-91	METAL GLAZE 100	5% 1/10W
R335	1-216-033-00	METAL GLAZE 220	5% 1/10W	R422	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R337	1-216-033-00	METAL GLAZE 220	5% 1/10W	R423	1-216-025-91	METAL GLAZE 100	5% 1/10W
R338	1-216-033-00	METAL GLAZE 220	5% 1/10W	R424	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R339	1-216-033-00	METAL GLAZE 220	5% 1/10W	R425	1-216-041-00	METAL GLAZE 470	5% 1/10W
R340	1-216-025-91	METAL GLAZE 100	5% 1/10W	R427	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R342	1-216-025-91	METAL GLAZE 100	5% 1/10W	R428	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R343	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R429	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R344	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W	R430	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R345	1-216-109-00	METAL GLAZE 330K	5% 1/10W	R432	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R346	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W	R433	1-216-011-00	METAL GLAZE 27	5% 1/10W
R347	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R434	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R348	1-216-133-00	METAL GLAZE 3.3M	5% 1/10W	R435	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R349	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R436	1-216-011-00	METAL GLAZE 27	5% 1/10W
R350	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R437	1-249-418-11	CARBON 1.2K	5% 1/4W F
R351	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W	R438	1-249-418-11	CARBON 1.2K	5% 1/4W F
R352	1-216-059-00	METAL GLAZE 2.7K	5% 1/10W	R439	1-249-389-11	CARBON 4.7	5% 1/4W F
R353	1-216-059-00	METAL GLAZE 2.7K	5% 1/10W	R440	1-249-389-11	CARBON 4.7	5% 1/4W F
R354	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R441	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R355	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R442	1-216-025-91	METAL GLAZE 100	5% 1/10W
R356	1-216-025-91	METAL GLAZE 100	5% 1/10W	R443	1-216-295-91	CONDUCTOR, CHIP	
R357	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R444	1-216-295-91	CONDUCTOR, CHIP	
R361	1-216-041-00	METAL GLAZE 470	5% 1/10W	R1101	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R362	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R1102	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R363	1-216-077-00	METAL GLAZE 15K	5% 1/10W	R1103	1-216-689-11	METAL GLAZE 39K	5% 1/10W
R364	1-208-783-11	METAL GLAZE 1.1K	0.50% 1/10W	R1104	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R365	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R1105	1-216-689-11	METAL GLAZE 39K	5% 1/10W
R366	1-216-017-91	METAL GLAZE 47	5% 1/10W	R1106	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R367	1-216-083-00	METAL GLAZE 27K	5% 1/10W	R1107	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R368	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R1108	1-215-900-11	METAL OXIDE 22K	5% 2W F
R369	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R1501	1-216-351-00	METAL OXIDE 1.5	5% 1W F
R370	1-216-083-00	METAL GLAZE 27K	5% 1/10W	R1502	1-216-675-11	METAL CHIP 10K	0.50% 1/10W
R371	1-216-077-00	METAL GLAZE 15K	5% 1/10W	R1504	1-216-675-11	METAL CHIP 10K	0.50% 1/10W
R372	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W	R1505	1-215-857-11	METAL OXIDE 10	5% 1W F
R373	1-216-079-00	METAL GLAZE 18K	5% 1/10W	R1506	1-215-888-00	METAL OXIDE 220	5% 2W F
				R1507	1-216-081-00	METAL GLAZE 22K	5% 1/10W

The components identified by shading and mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

• The components identified by  $\blacktriangle$  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R1508	1-249-383-11	CARBON	1.5 5% 1/4W F	C507	1-126-965-11	ELECT	22 $\mu$ F 20% 50V
R1509	1-216-675-11	METAL CHIP	10K 0.50% 1/10W	C508	1-102-212-00	CERAMIC	820PF 10% 500V
R1510	1-216-675-11	METAL CHIP	10K 0.50% 1/10W	C509	1-106-383-00	MYLAR	0.047 $\mu$ F 10% 200V
R1511	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C510	1-102-002-00	CERAMIC	680PF 10% 500V
R1520	1-216-089-91	METAL GLAZE	47K 5% 1/10W	C511	1-130-475-00	MYLAR	0.0022 $\mu$ F 5% 50V
R1522	1-216-089-91	METAL GLAZE	47K 5% 1/10W	C512	1-136-479-11	FILM	0.001 $\mu$ F 5% 50V
R1523	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C513	1-126-965-11	ELECT	22 $\mu$ F 20% 50V
R1524	1-216-097-91	METAL GLAZE	100K 5% 1/10W	$\blacktriangle$ C514 $\triangle$	CERAMIC		2KV
R1525	1-216-686-11	METAL CHIP	30K 0.50% 1/10W	C515 $\triangle$	1-125-831-91	FILM	0.033 $\mu$ F 3% 630V
R1526	1-216-686-11	METAL CHIP	30K 0.50% 1/10W	C516 $\triangle$	1-117-807-11	FILM	14500PF 3% 1.6KV
R1527	1-216-097-91	METAL GLAZE	100K 5% 1/10W	C518	1-130-495-00	MYLAR	0.1 $\mu$ F 5% 50V
R1528	1-216-089-91	METAL GLAZE	47K 5% 1/10W	C519	1-136-287-11	FILM	0.0047 $\mu$ F 5% 100V
R1529	1-216-025-91	METAL GLAZE	100 5% 1/10W	C520	1-162-116-00	CERAMIC	680PF 10% 2KV
R2106	1-216-025-91	METAL GLAZE	100 5% 1/10W	C521	1-162-116-00	CERAMIC	680PF 10% 2KV
R2109	1-216-041-00	METAL GLAZE	470 5% 1/10W	C522	1-117-673-11	FILM	1.5 $\mu$ F 5% 200V
R2110	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C524	1-136-287-11	FILM	0.0047 $\mu$ F 5% 100V
R2111	1-216-089-91	METAL GLAZE	47K 5% 1/10W	C526	1-102-228-00	CERAMIC	470PF 10% 500V
R2112	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W	C527	1-104-664-11	ELECT	47 $\mu$ F 20% 25V
R2201	1-216-041-00	METAL GLAZE	470 5% 1/10W	C528	1-107-649-11	ELECT	2.2 $\mu$ F 20% 250V
R2202	1-216-041-00	METAL GLAZE	470 5% 1/10W	C529	1-109-961-11	FILM	0.75 $\mu$ F 5% 200V
R2203	1-216-025-91	METAL GLAZE	100 5% 1/10W	C530	1-110-626-11	ELECT	330 $\mu$ F 20% 160V
R2204	1-216-045-00	METAL GLAZE	680 5% 1/10W	C531	1-126-971-11	ELECT	470 $\mu$ F 20% 50V
R2205	1-216-041-00	METAL GLAZE	470 5% 1/10W	C532	1-126-971-11	ELECT	470 $\mu$ F 20% 50V
R2208	1-216-041-00	METAL GLAZE	470 5% 1/10W	C533	1-128-562-11	ELECT	47 $\mu$ F 20% 100V
R2209	1-216-041-00	METAL GLAZE	470 5% 1/10W	C535	1-106-387-00	MYLAR	0.068 $\mu$ F 5% 200V
<THERMISTOR>				C536	1-130-489-00	MYLAR	0.033 $\mu$ F 5% 50V
TH1501	1-800-193-00	THERMISTOR		C537	1-104-665-11	ELECT	100 $\mu$ F 20% 25V
<TUNER>				C538	1-104-665-11	ELECT	100 $\mu$ F 20% 25V
TU1101	8-598-340-00	TUNER, FSS BTF-WA404		C539	1-162-114-00	CERAMIC	0.0047 $\mu$ F 2KV
TU1102	8-598-339-00	TUNER, FSS BTF-LA402		C540	1-130-487-00	MYLAR	0.022 $\mu$ F 5% 50V
<CRYSTAL>				C541	1-130-489-00	MYLAR	0.033 $\mu$ F 5% 50V
X001	1-577-358-21	VIBRATOR, CERAMIC		C542	1-104-666-11	ELECT	220 $\mu$ F 20% 25V
X002	1-578-774-11	VIBRATOR, CRYSTAL		C544	1-104-665-11	ELECT	100 $\mu$ F 20% 25V
X301	1-567-505-11	OSCILLATOR, CRYSTAL		C545	1-104-665-11	ELECT	100 $\mu$ F 20% 25V
X304	1-577-611-11	OSCILALTOR, CERAMIC		C546	1-107-637-11	ELECT	22 $\mu$ F 20% 160V
*****				C548	1-102-244-00	CERAMIC	220PF 10% 500V
* A-1316-367-A G BOARD, COMPLETE				C550	1-126-935-11	ELECT	470 $\mu$ F 20% 16V
*****				C551	1-126-935-11	ELECT	470 $\mu$ F 20% 16V
* 4-057-835-01 PLATE, TRANSFORMER SHIELD				C554	1-129-702-00	FILM	0.001 $\mu$ F 5% 630V
4-382-854-11 SCREW (M3X10), P, SW (+)				C555	1-126-960-11	ELECT	1 $\mu$ F 20% 50V
4-382-854-51 SCREW (M3X8), P, SW (+)				C556	1-130-495-00	MYLAR	0.1 $\mu$ F 5% 50V
7-682-952-09 SCREW +PSW 3X16				C602 $\triangle$	1-113-920-11	CERAMIC	0.0022 $\mu$ F 20% 250V
<CAPACITOR>				C603	1-104-330-91	CERAMIC	470PF 10% 1KV
C502	1-126-959-11	ELECT	0.47 $\mu$ F 20% 50V	C604 $\triangle$	1-136-311-11	FILM	0.47 $\mu$ F 20% 125V
C504	1-102-116-00	CERAMIC	680PF 10% 50V	C605 $\triangle$	1-113-920-11	CERAMIC	0.0022 $\mu$ F 20% 250V
C505	1-130-471-00	MYLAR	0.001 $\mu$ F 5% 50V	C606 $\triangle$	1-136-311-11	FILM	0.47 $\mu$ F 20% 125V
C506	1-126-933-11	ELECT	100 $\mu$ F 20% 16V	C607	1-125-692-11	ELECT(BLOCK)	820 $\mu$ F 20% 200V
				C608	1-125-692-11	ELECT(BLOCK)	820 $\mu$ F 20% 200V
				C612	1-164-646-11	CERAMIC	2200PF 10% 500V
				C615	1-136-173-00	FILM	0.47 $\mu$ F 5% 50V
				C616	1-136-173-00	FILM	0.47 $\mu$ F 5% 50V
				C617	1-136-169-00	FILM	0.22 $\mu$ F 5% 50V
				C618	1-136-169-00	FILM	0.22 $\mu$ F 5% 50V
				C621	1-129-719-00	FILM	0.027 $\mu$ F 5% 630V
				C651	1-107-910-11	ELECT	100 $\mu$ F 20% 35V
				C652	1-123-024-21	ELECT	33 $\mu$ F 160V



REF. NO.	PART NO.	DESCRIPTION	REMARK		
C653	1-115-755-11	ELECT	180μF	20%	16V
C654	1-115-755-11	ELECT	180μF	20%	16V
C655	1-126-943-11	ELECT	2200μF	20%	25V
C656	1-126-943-11	ELECT	2200μF	20%	25V
C657	1-126-943-11	ELECT	2200μF	20%	25V
C658	1-128-550-11	ELECT	2200μF	20%	50V
C659	1-102-074-00	CERAMIC	0.001μF	10%	50V
C660	1-126-235-11	ELECT	100μF	20%	6.3V
C661	1-102-074-00	CERAMIC	0.001μF	10%	50V
C662	1-104-664-11	ELECT	47μF	20%	25V
C663	1-104-664-11	ELECT	47μF	20%	25V
C664	1-107-888-11	ELECT	47μF	20%	25V
C665	1-104-666-11	ELECT	220μF	20%	25V
C666	1-126-960-11	ELECT	1μF	20%	50V
C667	1-104-664-11	ELECT	47μF	20%	25V
C668	1-126-933-11	ELECT	100μF	20%	16V
C671	1-104-664-11	ELECT	47μF	20%	25V
C672	1-126-971-11	ELECT	470μF	20%	50V
C673	1-162-115-00	CERAMIC	330PF	10%	1KV
C675	1-104-665-11	ELECT	100μF	20%	25V
C676	1-126-960-11	ELECT	1μF	20%	50V
C801	1-104-665-11	ELECT	100μF	20%	25V
C802	1-104-665-11	ELECT	100μF	20%	25V
C803	1-126-934-11	ELECT	220μF	20%	16V
C804	1-126-934-11	ELECT	220μF	20%	16V
C805	1-126-934-11	ELECT	220μF	20%	16V
C806	1-126-934-11	ELECT	220μF	20%	16V
C807	1-137-374-11	FILM	0.047μF	5%	50V
C808	1-137-374-11	FILM	0.047μF	5%	50V
C809	1-137-374-11	FILM	0.047μF	5%	50V
C810	1-137-374-11	FILM	0.047μF	5%	50V
C811	1-137-366-11	FILM	0.0022μF	5%	50V
C812	1-136-169-00	FILM	0.22μF	5%	50V
C813	1-137-374-11	FILM	0.047μF	5%	50V
C815	1-126-941-11	ELECT	470μF	20%	25V
C816	1-126-964-11	ELECT	10μF	20%	50V
C817	1-164-096-11	CERAMIC	0.01μF		50V
C818	1-126-933-11	ELECT	100μF	20%	16V
C819	1-126-964-11	ELECT	10μF	20%	50V
C820	1-102-114-00	CERAMIC	470PF	10%	50V
C821	1-130-495-00	MYLAR	0.1μF	5%	50V
C822	1-164-096-11	CERAMIC	0.01μF		50V
C823	1-101-880-00	CERAMIC	47PF	5%	50V
C825	1-104-665-11	ELECT	100μF	20%	25V
C826	1-136-165-00	FILM	0.1μF	5%	50V
C827	1-126-960-11	ELECT	1μF	20%	50V
C828	1-137-366-11	FILM	0.0022μF	5%	50V
C829	1-126-959-11	ELECT	0.47μF	20%	50V
C830	1-136-356-11	FILM	470PF	5%	50V
C831	1-126-960-11	ELECT	1μF	20%	50V
C832	1-126-960-11	ELECT	1μF	20%	50V
C833	1-126-960-11	ELECT	1μF	20%	50V
C834	1-104-665-11	ELECT	100μF	20%	25V
C835	1-104-664-11	ELECT	47μF	20%	25V
C836	1-136-169-00	FILM	0.22μF	5%	50V
C837	1-126-963-11	ELECT	4.7μF	20%	50V
C838	1-104-665-11	ELECT	100μF	20%	25V

REF. NO.	PART NO.	DESCRIPTION	REMARK		
C839	1-137-374-11	FILM	0.047μF	5%	50V
C840	1-104-665-11	ELECT	100μF	20%	25V
C841	1-137-374-11	FILM	0.047μF	5%	50V
C842	1-137-374-11	FILM	0.047μF	5%	50V
C843	1-104-665-11	ELECT	100μF	20%	25V
C844	1-126-933-11	ELECT	100μF	20%	16V
C845	1-126-933-11	ELECT	100μF	20%	16V
C846	1-126-933-11	ELECT	100μF	20%	16V
C847	1-126-933-11	ELECT	100μF	20%	16V
C848	1-126-933-11	ELECT	100μF	20%	16V
C851	1-137-374-11	FILM	0.047μF	5%	50V
C852	1-137-374-11	FILM	0.047μF	5%	50V
C853	1-137-374-11	FILM	0.047μF	5%	50V
C854	1-126-933-11	ELECT	100μF	20%	16V
C857	1-126-933-11	ELECT	100μF	20%	16V
C858	1-126-941-11	ELECT	470μF	20%	25V
C860	1-126-933-11	ELECT	100μF	20%	16V
C861	1-137-374-11	FILM	0.047μF	5%	50V
C862	1-137-374-11	FILM	0.047μF	5%	50V
C863	1-137-374-11	FILM	0.047μF	5%	50V
C864	1-126-933-11	ELECT	100μF	20%	16V
C865	1-130-471-00	MYLAR	0.001μF	5%	50V
C866	1-136-177-00	FILM	1μF	5%	50V
C867	1-101-880-00	CERAMIC	47PF	5%	50V
C868	1-101-880-00	CERAMIC	47PF	5%	50V
C869	1-130-487-00	MYLAR	0.022μF	5%	50V
C871	1-101-880-00	CERAMIC	47PF	5%	50V
C872	1-101-880-00	CERAMIC	47PF	5%	50V
C873	1-101-880-00	CERAMIC	47PF	5%	50V
C880	1-126-961-11	ELECT	2.2μF	20%	50V
C881	1-102-973-00	CERAMIC	100PF	5%	50V
C882	1-102-973-00	CERAMIC	100PF	5%	50V
C883	1-102-973-00	CERAMIC	100PF	5%	50V
C885	1-126-961-11	ELECT	2.2μF	20%	50V
C886	1-102-973-00	CERAMIC	100PF	5%	50V
C887	1-102-973-00	CERAMIC	100PF	5%	50V
C888	1-102-973-00	CERAMIC	100PF	5%	50V
C889	1-126-941-11	ELECT	470μF	20%	25V
C897	1-126-941-11	ELECT	470μF	20%	25V
<CONNECTOR>					
CN501	1-564-513-11	PLUG, CONNECTOR 10P			
CN502	* 1-580-689-11	PIN, CONNECTOR (PC BOARD) 4P			
CN503	* 1-580-689-11	PIN, CONNECTOR (PC BOARD) 4P			
CN504	* 1-580-689-11	PIN, CONNECTOR (PC BOARD) 4P			
CN505	* 1-506-371-00	PIN, CONNECTOR 2P			
CN506	* 1-774-182-11	CONNECTOR, BOARD TO BOARD10P			
CN507	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN601	* 1-580-843-11	PIN, CONNECTOR (POWER)			
CN651	* 1-774-182-11	CONNECTOR, BOARD TO BOARD10P			
CN652	* 1-774-182-11	CONNECTOR, BOARD TO BOARD10P			
CN653	* 1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P			
CN801	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN802	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN803	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN804	* 1-774-182-11	CONNECTOR, BOARD TO BOARD10P			





The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.










REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
CN805	* 1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P		D847	8-719-982-19	DIODE MTZJ-30A	
		<DIODE>		D848	8-719-923-86	DIODE MTZJ-T-77-15	
D501	8-719-991-33	DIODE 1SS133T-77		D849	8-719-110-22	DIODE RD11ESB2	
D502	8-719-991-33	DIODE 1SS133T-77		D850	8-719-109-89	DIODE RD5.6ESB2	
D503	8-719-018-82	DIODE RGP02-20EL-6394		D852	8-719-923-86	DIODE MTZJ-T-77-15	
D504	8-719-921-63	DIODE MTZJ-7.5B		D853	8-719-982-19	DIODE MTZJ-30A	
D507	8-719-302-43	DIODE EL1Z		D854	8-719-982-19	DIODE MTZJ-30A	
				D855	8-719-982-19	DIODE MTZJ-30A	
D508	8-719-900-26	DIODE ERD29-08J		D856	1-164-096-11	CERAMIC	0.01μF 50V
D509	8-719-945-80	DIODE ERC06-15S		D857	8-719-982-19	DIODE MTZJ-30A	
D510	8-719-945-80	DIODE ERC06-15S		D859	1-164-096-11	CERAMIC	0.01μF 50V
D511	8-719-302-43	DIODE EL1Z		D860	8-719-982-19	DIODE MTZJ-30A	
D513	8-719-302-43	DIODE EL1Z				<FUSE>	
D514	8-719-908-03	DIODE GP08D		F601	$\Delta$ 1-532-748-11	FUSE, GLASS TUBE 6.3A/125V	
D515	8-719-908-03	DIODE GP08D			1-533-223-11	CLIP, FUSE	
D517	8-719-018-82	DIODE RGP02-20EL-6394				<FERRITE BEAD>	
D519	8-719-991-33	DIODE 1SS133T-77		FB501	1-410-397-21	FERRITE	1.1μH
D520	8-719-302-43	DIODE EL1Z		FB651	1-410-396-41	FERRITE	0.45μH
D521	8-719-302-43	DIODE EL1Z		FB652	1-410-396-41	FERRITE	0.45μH
D524	8-719-991-33	DIODE 1SS133T-77		FB653	1-410-396-41	FERRITE	0.45μH
D527	8-719-109-85	DIODE RD5.1ESB2		FB654	1-410-397-21	FERRITE	1.1μH
D528	8-719-923-86	DIODE MTZJ-T-77-15		FB655	1-410-396-41	FERRITE	0.45μH
D602	$\Delta$ 8-719-052-84	DIODE LN4SB60		FB656	1-410-396-41	FERRITE	0.45μH
D651	8-719-510-26	DIODE D1NL20-TA		FB657	1-410-396-41	FERRITE	0.45μH
D652	8-719-991-33	DIODE 1SS133T-77		FB660	1-412-761-11	FERRITE	0μH
D653	8-719-510-02	DIODE D1NS4		FB661	1-412-761-11	FERRITE	0μH
D654	8-719-022-97	DIODE D2S4μF				<IC>	
D655	8-719-061-56	DIODE RBA-402LLF-A		IC501	8-759-133-90	IC UPC339C	
D656	8-719-052-92	DIODE D10SBS4F		IC601	$\Delta$ 8-729-041-12	TRANSISTOR MX0841AB-F	
D657	8-719-052-91	DIODE D4SBS4-F		IC651	$\Delta$ 1-810-051-11	POWER MODULE DM-48	
D658	8-719-510-12	DIODE D10SC4M		IC651	8-749-012-13	IC DM-58	
D660	8-719-991-33	DIODE 1SS133T-77		IC652	8-759-012-67	IC MC7905CT	
D661	8-719-200-82	DIODE 11ES2		IC653	8-759-231-53	IC TA7805S	
D662	8-719-991-33	DIODE 1SS133T-77		IC654	8-759-231-53	IC TA7805S	
D664	8-719-110-61	DIODE RD24ESB1		IC655	8-759-231-58	IC TA7812S	
D669	8-719-991-33	DIODE 1SS133T-77		IC801	8-759-327-51	IC PA0053B	
D670	8-719-923-86	DIODE MTZJ-13		IC802	8-759-327-51	IC PA0053B	
D691	8-719-200-82	DIODE 11ES2		IC803	8-759-183-37	IC CA0007AD	
D692	8-719-200-82	DIODE 11ES2		IC804	8-759-464-79	IC PM0011AS	
D693	8-719-200-82	DIODE 11ES2		IC805	8-759-711-28	IC NJM2058D	
D694	8-719-200-82	DIODE 11ES2		IC806	8-759-464-79	IC PM0011AS	
D801	8-719-110-17	DIODE RD10ESB2		IC808	8-759-464-79	IC PM0011AS	
D802	8-719-110-17	DIODE RD10ESB2		IC809	8-749-014-37	IC STK392-150	
D803	8-719-110-17	DIODE RD10ESB2		IC810	8-749-014-37	IC STK392-150	
D804	8-719-110-17	DIODE RD10ESB2		IC811	8-759-634-51	IC M5218AP	
D809	8-719-991-33	DIODE 1SS133T-77				<COIL>	
D810	8-719-991-33	DIODE 1SS133T-77		L502	1-410-478-11	INDUCTOR	47μH
D820	8-719-109-68	DIODE RD3.6ESB1		L503	1-459-111-00	INDUCTOR	0μH
D828	8-719-109-89	DIODE RD5.6ESB2		L506	1-412-552-11	INDUCTOR	2.2μH
D829	8-719-109-85	DIODE RD5.1ESB2					
D835	8-719-109-89	DIODE RD5.6ESB2					
D840	8-719-991-33	DIODE 1SS133T-77					
D842	8-719-991-33	DIODE 1SS133T-77					
D845	8-719-991-33	DIODE 1SS133T-77					
D846	8-719-991-33	DIODE 1SS133T-77					



• The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
L509	1-412-533-21	INDUCTOR 47μH		R513	1-249-424-11	CARBON 3.9K 5%	1/4W
L601	 1-424-248-11	TRANSFORMER, LINE FILTER		 R514 	METAL		1/4W
L651	1-414-158-11	INDUCTOR 2.2μH		R516	1-215-443-00	METAL 8.2K 1%	1/4W
L652	1-414-158-11	INDUCTOR 2.2μH		R517	1-215-449-00	METAL 15K 1%	1/4W
L653	1-414-158-11	INDUCTOR 2.2μH		R518	1-215-456-00	METAL 30K 1%	1/4W
L654	1-414-158-11	INDUCTOR 2.2μH		R519	1-247-863-91	CARBON 22K 5%	1/4W
L656	1-412-523-11	INDUCTOR 6.8μH		R522	1-249-428-11	CARBON 8.2K 5%	1/4W
L801	1-406-975-21	INDUCTOR 0μH		R523	1-249-437-11	CARBON 47K 5%	1/4W
L802	1-406-975-21	INDUCTOR 0μH		R524	1-247-863-91	CARBON 22K 5%	1/4W
<IC LINK>				R525	1-249-405-11	CARBON 100 5%	1/4W F
PS601	 1-533-597-31	LINK, IC		R528	1-215-910-00	METAL OXIDE 68 5%	3W F
PS602	 1-533-597-31	LINK, IC		R530	1-249-437-11	CARBON 47K 5%	1/4W
<TRANSISTOR>				R531	1-215-868-00	METAL OXIDE 680 5%	1W F
Q501	8-729-119-80	TRANSISTOR 2SC2688-LK		R532	1-260-314-11	CARBON 68 5%	1/2W
Q502	8-729-024-05	TRANSISTOR 2SD2348(LBSONY-1)		R533	1-214-912-00	METAL 91K 1%	1/2W
Q503	8-729-119-76	TRANSISTOR 2SA1175-HFE		R534	1-215-479-00	METAL 270K 1%	1/4W
Q504	8-729-823-81	TRANSISTOR 2SC4632LS-CB7		R535	1-247-887-00	CARBON 220K 5%	1/4W
Q505	8-729-931-45	TRANSISTOR IRF614		R536	1-260-288-11	CARBON 0.47 5%	1/2W
Q506	8-729-119-78	TRANSISTOR 2SC2785-HFE		R537	1-260-336-11	CARBON 4.7K 5%	1/2W
Q507	8-729-032-61	TRANSISTOR 2SC5022-02		R538	1-247-863-91	CARBON 22K 5%	1/4W
Q651	8-729-119-76	TRANSISTOR 2SA1175-HFE		R539	1-249-377-11	CARBON 0.47 5%	1/4W F
Q652	8-729-119-78	TRANSISTOR 2SC2785-HFE		R540	1-249-379-11	CARBON 0.68 5%	1/4W F
Q653	8-729-119-78	TRANSISTOR 2SC2785-HFE		R541	1-260-087-11	CARBON 100 5%	1/2W
Q654	8-729-119-76	TRANSISTOR 2SA1175-HFE		R542	1-215-862-11	METAL OXIDE 68 5%	1W F
Q655	8-729-119-76	TRANSISTOR 2SA1175-HFE		R543	1-216-349-00	METAL OXIDE 1 5%	1W F
Q656	8-729-119-78	TRANSISTOR 2SC2785-HFE		R544	1-215-862-11	METAL OXIDE 68 5%	1W F
Q657	8-729-119-76	TRANSISTOR 2SA1175-HFE		R545	1-249-377-11	CARBON 0.47 5%	1/4W F
Q658	8-729-119-78	TRANSISTOR 2SC2785-HFE		R546	1-249-377-11	CARBON 0.47 5%	1/4W F
Q659	8-729-119-76	TRANSISTOR 2SA1175-HFE		R547	1-247-807-31	CARBON 100 5%	1/4W
Q660	8-729-119-78	TRANSISTOR 2SC2785-HFE		R548	1-249-413-11	CARBON 470 5%	1/4W
Q661	8-729-119-78	TRANSISTOR 2SC2785-HFE		R549	1-247-863-91	CARBON 22K 5%	1/4W
Q662	8-729-119-78	TRANSISTOR 2SC2785-HFE		R550	1-247-807-31	CARBON 100 5%	1/4W
Q802	8-729-119-76	TRANSISTOR 2SA1175-HFE		R551	1-249-437-11	CARBON 47K 5%	1/4W
Q803	8-729-119-76	TRANSISTOR 2SA1175-HFE		R552	1-247-807-31	CARBON 100 5%	1/4W
Q804	8-729-119-78	TRANSISTOR 2SC2785-HFE		R553	1-247-881-00	CARBON 120K 5%	1/4W
Q805	8-729-119-78	TRANSISTOR 2SC2785-HFE		R554	1-249-405-11	CARBON 100 5%	1/4W F
Q809	8-729-119-78	TRANSISTOR 2SC2785-HFE		R556	1-260-117-11	CARBON 33K 5%	1/2W
Q810	8-729-119-78	TRANSISTOR 2SC2785-HFE		R557	1-216-490-11	METAL OXIDE 39K 5%	3W F
<RESISTOR>				R558	1-216-490-11	METAL OXIDE 39K 5%	3W F
R501	1-249-421-11	CARBON 2.2K 5%	1/4W	R559	1-216-490-11	METAL OXIDE 39K 5%	3W F
R502	1-215-879-11	METAL OXIDE 47K 5%	1W F	R560	1-215-399-00	METAL 120 1%	1/4W
R503	1-247-843-11	CARBON 3.3K 5%	1/4W	 R561 	METAL		1/4W
R504	1-249-419-11	CARBON 1.5K 5%	1/4W	R563	1-249-429-11	CARBON 10K 5%	1/4W
R505	1-247-895-91	CARBON 470K 5%	1/4W	R564	1-260-131-11	CARBON 470K 5%	1/2W
R506	1-249-429-11	CARBON 10K 5%	1/4W	R565	1-260-087-11	CARBON 100 5%	1/2W
R507	1-249-422-11	CARBON 2.7K 5%	1/4W	R566	1-249-377-11	CARBON 0.47 5%	1/4W F
R508	1-260-337-11	CARBON 5.6K 5%	1/2W	R567	1-249-377-11	CARBON 0.47 5%	1/4W F
R509	1-249-437-11	CARBON 47K 5%	1/4W	R568	1-247-903-00	CARBON 1M 5%	1/4W
R510	1-215-919-11	METAL OXIDE 2.2K 5%	3W F	R569	1-216-392-11	METAL OXIDE 1.8 5%	3W F
R511	1-215-919-11	METAL OXIDE 2.2K 5%	3W F	R570	1-215-910-00	METAL OXIDE 68 5%	3W F
R512	1-216-482-11	METAL OXIDE 1.8K 5%	3W F	R571	1-249-422-11	CARBON 2.7K 5%	1/4W
				R572	1-247-895-91	CARBON 470K 5%	1/4W
				R573	1-249-430-11	CARBON 12K 5%	1/4W
				R574	1-249-429-11	CARBON 10K 5%	1/4W
				R577	1-249-422-11	CARBON 2.7K 5%	1/4W
				R579	1-247-895-91	CARBON 470K 5%	1/4W

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	REMARK			REF. NO.	PART NO.	DESCRIPTION	REMARK		
R580	1-247-863-91	CARBON	22K	5%	1/4W	R806	1-249-429-11	CARBON	10K	5%	1/4W
R581	1-249-428-11	CARBON	8.2K	5%	1/4W	R807	1-247-807-31	CARBON	100	5%	1/4W
R583	1-249-428-11	CARBON	8.2K	5%	1/4W	R808	1-249-429-11	CARBON	10K	5%	1/4W
R584	1-247-887-00	CARBON	220K	5%	1/4W	R809	1-249-425-11	CARBON	4.7K	5%	1/4W
R585	1-216-490-11	METAL OXIDE	39K	5%	3W F	R810	1-247-807-31	CARBON	100	5%	1/4W
R586	1-260-292-11	CARBON	1	5%	1/2W	R811	1-247-807-31	CARBON	100	5%	1/4W
R588	1-247-863-91	CARBON	22K	5%	1/4W	R812	1-249-429-11	CARBON	10K	5%	1/4W
R589	1-247-887-00	CARBON	220K	5%	1/4W	R813	1-249-429-11	CARBON	10K	5%	1/4W
R591	1-215-917-11	METAL OXIDE	1K	5%	3W F	R814	1-247-807-31	CARBON	100	5%	1/4W
R601	$\Delta$ 1-219-512-11	CARBON	2.2M	5%	1/2W	R815	1-247-807-31	CARBON	100	5%	1/4W
R602	$\Delta$ 1-202-981-11	CEMENTED	0.82	5%	20W	R816	1-247-807-31	CARBON	100	5%	1/4W
R608	$\Delta$ 1-202-933-61	FUSIBLE	0.1	10%	1/2W F	R817	1-247-807-31	CARBON	100	5%	1/4W
R609	1-247-887-00	CARBON	220K	5%	1/4W	R818	1-249-430-11	CARBON	12K	5%	1/4W
R610	1-247-887-00	CARBON	220K	5%	1/4W	R820	1-249-429-11	CARBON	10K	5%	1/4W
R611	1-216-353-00	METAL OXIDE	2.2	5%	1W F	R821	1-249-428-11	CARBON	8.2K	5%	1/4W
R612	1-247-887-00	CARBON	220K	5%	1/4W	R822	1-249-417-11	CARBON	1K	5%	1/4W
R613	1-216-353-00	METAL OXIDE	2.2	5%	1W F	R823	1-249-417-11	CARBON	1K	5%	1/4W
R614	1-247-887-00	CARBON	220K	5%	1/4W	R824	1-215-462-00	METAL	51K	1%	1/4W
R651	1-249-429-11	CARBON	10K	5%	1/4W	R825	1-249-441-11	CARBON	100K	5%	1/4W
R653	1-249-377-11	CARBON	0.47	5%	1/4W F	R826	1-215-462-00	METAL	51K	1%	1/4W
R655	1-247-887-00	CARBON	220K	5%	1/4W	R827	1-249-417-11	CARBON	1K	5%	1/4W
R656	1-260-288-11	CARBON	0.47	5%	1/2W	R828	1-249-426-11	CARBON	5.6K	5%	1/4W
R657	1-249-429-11	CARBON	10K	5%	1/4W	R829	1-249-426-11	CARBON	5.6K	5%	1/4W
R658	1-249-417-11	CARBON	1K	5%	1/4W	R830	1-249-414-11	CARBON	560	5%	1/4W
R660	1-249-413-11	CARBON	470	5%	1/4W	R831	1-249-414-11	CARBON	560	5%	1/4W
R661	1-249-417-11	CARBON	1K	5%	1/4W F	R832	1-249-441-11	CARBON	100K	5%	1/4W
R662	1-249-425-11	CARBON	4.7K	5%	1/4W	R833	1-249-417-11	CARBON	1K	5%	1/4W
R664	1-249-425-11	CARBON	4.7K	5%	1/4W	R834	1-249-441-11	CARBON	100K	5%	1/4W
R665	1-247-807-31	CARBON	100	5%	1/4W	R835	1-249-441-11	CARBON	100K	5%	1/4W
R667	1-249-417-11	CARBON	1K	5%	1/4W	R836	1-247-807-31	CARBON	100	5%	1/4W
R668	1-249-377-11	CARBON	0.47	5%	1/4W F	R837	1-249-441-11	CARBON	100K	5%	1/4W
R669	1-249-429-11	CARBON	10K	5%	1/4W	R838	1-249-421-11	CARBON	2.2K	5%	1/4W
R672	1-249-421-11	CARBON	2.2K	5%	1/4W	R841	1-247-815-91	CARBON	220	5%	1/4W
R673	1-249-413-11	CARBON	470	5%	1/4W	R842	1-247-807-31	CARBON	100	5%	1/4W
R675	1-215-417-00	METAL	680	1%	1/4W	R843	1-247-807-31	CARBON	100	5%	1/4W
R676	1-216-369-00	METAL OXIDE	1	5%	2W F	R844	1-247-807-31	CARBON	100	5%	1/4W
R677	1-247-807-31	CARBON	100	5%	1/4W	R845	1-249-441-11	CARBON	100K	5%	1/4W
R679	1-249-421-11	CARBON	2.2K	5%	1/4W	R846	1-247-807-31	CARBON	100	5%	1/4W
R680	1-249-417-11	CARBON	1K	5%	1/4W	R847	1-215-469-00	METAL	100K	1%	1/4W
R681	1-249-417-11	CARBON	1K	5%	1/4W	R850	1-215-469-00	METAL	100K	1%	1/4W
R682	1-249-417-11	CARBON	1K	5%	1/4W	R851	1-247-807-31	CARBON	100	5%	1/4W
R683	1-249-417-11	CARBON	1K	5%	1/4W	R852	1-247-807-31	CARBON	100	5%	1/4W
R684	1-249-417-11	CARBON	1K	5%	1/4W	R853	1-247-887-00	CARBON	220K	5%	1/4W
R686	1-215-421-00	METAL	1K	1%	1/4W	R854	1-249-429-11	CARBON	10K	5%	1/4W
R687	1-215-441-00	METAL	6.8K	1%	1/4W	R855	1-247-815-91	CARBON	220	5%	1/4W
R688	1-215-481-00	METAL	330K	1%	1/4W	R856	1-247-807-31	CARBON	100	5%	1/4W
R689	1-249-425-11	CARBON	4.7K	5%	1/4W	R857	1-247-807-31	CARBON	100	5%	1/4W
R690	1-249-417-11	CARBON	1K	5%	1/4W	R858	1-215-455-00	METAL	27K	1%	1/4W
R692	1-249-425-11	CARBON	4.7K	5%	1/4W	R859	1-215-455-00	METAL	27K	1%	1/4W
R693	1-249-429-11	CARBON	10K	5%	1/4W	R860	1-215-455-00	METAL	27K	1%	1/4W
R695	1-247-807-31	CARBON	100	5%	1/4W	R861	1-215-455-00	METAL	27K	1%	1/4W
R696	1-249-417-11	CARBON	1K	5%	1/4W	R862	1-215-455-00	METAL	27K	1%	1/4W
R697	1-249-417-11	CARBON	1K	5%	1/4W	R863	1-215-455-00	METAL	27K	1%	1/4W
R801	1-249-437-11	CARBON	47K	5%	1/4W	R865	1-249-424-11	CARBON	3.9K	5%	1/4W
R803	1-249-430-11	CARBON	12K	5%	1/4W	R867	1-215-461-00	METAL	47K	1%	1/4W
R804	1-249-429-11	CARBON	10K	5%	1/4W	R868	1-215-445-00	METAL	10K	1%	1/4W
R805	1-247-807-31	CARBON	100	5%	1/4W	R869	1-247-863-11	CARBON	22K	5%	1/4W



REF. NO.	PART NO.	DESCRIPTION			REMARK	REF. NO.	PART NO.	DESCRIPTION			REMARK
R871	1-249-417-11	CARBON	1K	5%	1/4W	R935	1-249-429-11	CARBON	10K	5%	1/4W
R872	1-247-863-11	CARBON	22K	5%	1/4W	R936	1-249-429-11	CARBON	10K	5%	1/4W
R873	1-247-807-31	CARBON	100	5%	1/4W	R937	1-249-435-11	CARBON	33K	5%	1/4W
R874	1-249-429-11	CARBON	10K	5%	1/4W	R938	1-215-421-00	METAL	1K	1%	1/4W
R875	1-249-441-11	CARBON	100K	5%	1/4W	R940	1-249-441-11	CARBON	100K	5%	1/4W
R876	1-215-451-00	METAL	18K	1%	1/4W	R941	1-249-441-11	CARBON	100K	5%	1/4W
R879	1-215-444-00	METAL	9.1K	1%	1/4W	R942	1-249-421-11	CARBON	2.2K	5%	1/4W
R881	1-249-408-11	CARBON	180	5%	1/4W	R943	1-249-441-11	CARBON	100K	5%	1/4W
R882	1-215-445-00	METAL	10K	1%	1/4W	R944	1-215-421-00	METAL	1K	1%	1/4W
R883	1-215-445-00	METAL	10K	1%	1/4W	R945	1-249-429-11	CARBON	10K	5%	1/4W
R884	1-215-445-00	METAL	10K	1%	1/4W	R946	1-215-421-00	METAL	1K	1%	1/4W
R885	1-249-441-11	CARBON	100K	5%	1/4W	R947	1-249-441-11	CARBON	100K	5%	1/4W
R886	1-249-428-11	CARBON	8.2K	5%	1/4W	R948	1-247-815-91	CARBON	220	5%	1/4W
R887	1-247-807-31	CARBON	100	5%	1/4W	R949	1-247-807-31	CARBON	100	5%	1/4W
R888	1-247-807-31	CARBON	100	5%	1/4W	R950	1-247-807-31	CARBON	100	5%	1/4W
R889	1-249-438-11	CARBON	56K	5%	1/4W	R951	1-247-807-31	CARBON	100	5%	1/4W
R890	1-249-441-11	CARBON	100K	5%	1/4W	R952	1-247-807-31	CARBON	100	5%	1/4W
R891	1-249-429-11	CARBON	10K	5%	1/4W	R953	1-247-863-91	CARBON	22K	5%	1/4W
R892	1-215-445-00	METAL	10K	1%	1/4W	R954	1-215-433-00	METAL	3.3K	1%	1/4W
R895	1-249-421-11	CARBON	2.2K	5%	1/4W	R955	1-215-433-00	METAL	3.3K	1%	1/4W
R896	1-249-441-11	CARBON	100K	5%	1/4W	R956	1-249-429-11	CARBON	10K	5%	1/4W
R897	1-247-807-31	CARBON	100	5%	1/4W	R957	1-214-800-11	METAL	2.2	1%	1/2W
R898	1-247-815-91	CARBON	220	5%	1/4W	R958	1-214-800-11	METAL	2.2	1%	1/2W
R899	1-247-815-91	CARBON	220	5%	1/4W	R959	1-215-433-00	METAL	3.3K	1%	1/4W
R901	1-249-430-11	CARBON	12K	5%	1/4W	R960	1-215-451-00	METAL	18K	1%	1/4W
R902	1-249-438-11	CARBON	56K	5%	1/4W	R961	1-249-425-11	CARBON	4.7K	5%	1/4W
R903	1-215-421-00	METAL	1K	1%	1/4W	R962	1-214-800-11	METAL	2.2	1%	1/2W
R904	1-214-800-11	METAL	2.2	1%	1/2W	R963	1-214-800-11	METAL	2.2	1%	1/2W
R905	1-214-800-11	METAL	2.2	1%	1/2W	R964	1-215-433-00	METAL	3.3K	1%	1/4W
R906	1-214-800-11	METAL	2.2	1%	1/2W	R965	1-215-433-00	METAL	3.3K	1%	1/4W
R907	1-247-815-91	CARBON	220	5%	1/4W	R966	1-247-815-91	CARBON	220	5%	1/4W
R908	1-247-815-91	CARBON	220	5%	1/4W	R967	1-215-455-00	METAL	27K	1%	1/4W
R909	1-215-421-00	METAL	1K	1%	1/4W	R968	1-215-455-00	METAL	27K	1%	1/4W
R910	1-215-421-00	METAL	1K	1%	1/4W	R969	1-215-455-00	METAL	27K	1%	1/4W
R911	1-215-455-00	METAL	27K	1%	1/4W	R970	1-215-455-00	METAL	27K	1%	1/4W
R912	1-215-469-00	METAL	100K	1%	1/4W	R971	1-215-455-00	METAL	27K	1%	1/4W
R913	1-215-455-00	METAL	27K	1%	1/4W	R972	1-215-455-00	METAL	27K	1%	1/4W
R914	1-215-455-00	METAL	27K	1%	1/4W	R973	1-214-800-11	METAL	2.2	1%	1/2W
R915	1-215-455-00	METAL	27K	1%	1/4W	R974	1-215-463-00	METAL	56K	1%	1/4W
R916	1-215-455-00	METAL	27K	1%	1/4W	R975	1-214-800-11	METAL	2.2	1%	1/2W
R917	1-215-455-00	METAL	27K	1%	1/4W	R976	1-215-433-00	METAL	3.3K	1%	1/4W
R918	1-215-455-00	METAL	27K	1%	1/4W	R977	1-247-815-91	CARBON	220	5%	1/4W
R919	1-249-435-11	CARBON	33K	5%	1/4W	R978	1-215-445-00	METAL	10K	1%	1/4W
R920	1-214-800-11	METAL	2.2	1%	1/2W	R979	1-249-425-11	CARBON	4.7K	5%	1/4W
R921	1-249-429-11	CARBON	10K	5%	1/4W	R980	1-247-815-91	CARBON	220	5%	1/4W
R922	1-215-445-00	METAL	10K	1%	1/4W	R981	1-247-815-91	CARBON	220	5%	1/4W
R923	1-247-863-91	CARBON	22K	5%	1/4W	R983	1-247-815-91	CARBON	220	5%	1/4W
R924	1-215-444-00	METAL	9.1K	1%	1/4W	R984	1-215-444-00	METAL	9.1K	1%	1/4W
R925	1-247-863-91	CARBON	22K	5%	1/4W	R985	1-215-445-00	METAL	10K	1%	1/4W
R926	1-249-408-11	CARBON	180	5%	1/4W	R986	1-215-451-00	METAL	18K	1%	1/4W
R927	1-215-445-00	METAL	10K	1%	1/4W	R987	1-249-408-11	CARBON	180	5%	1/4W
R928	1-215-445-00	METAL	10K	1%	1/4W	R988	1-215-445-00	METAL	10K	1%	1/4W
R929	1-214-800-11	METAL	2.2	1%	1/2W	R989	1-247-863-91	CARBON	22K	5%	1/4W
R930	1-214-800-11	METAL	2.2	1%	1/2W	R990	1-249-429-11	CARBON	10K	5%	1/4W
R931	1-215-445-00	METAL	10K	1%	1/4W	R991	1-249-429-11	CARBON	10K	5%	1/4W
R933	1-215-453-00	METAL	22K	1%	1/4W	R993	1-247-863-91	CARBON	22K	5%	1/4W
R934	1-249-429-11	CARBON	10K	5%	1/4W						

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	REMARK
R996	1-247-815-91	CARBON 220 5%	1/4W
R997	1-215-445-00	METAL 10K 1%	1/4W
R998	1-249-434-11	CARBON 27K 5%	1/4W
R999	1-249-434-11	CARBON 27K 5%	1/4W

<RELAY>

RY601  $\Delta$  1-755-018-11 RELAY

<TRANSFORMER>

T501	$\Delta$ 1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE
T502	$\Delta$ 1-431-896-11	TRANSFORMER, FERRITE (PMT)
T503	$\Delta$ 1-431-212-11	TRANSFORMER, HORIZONTAL LINEAR
T504	$\Delta$ 1-453-238-11	TRANSFORMER ASSY, FLYBACK
(NX-4007//X4A4)		

T603	$\Delta$ 1-423-665-11	TRANSFORMER, POWER
T604	$\Delta$ 1-429-992-11	TRANSFORMER, CONVERTER (PRT)
T605	$\Delta$ 1-429-985-11	TRANSFORMER, CONVERTER (PIT)

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\* A-1331-777-A CR BOARD, COMPLETE  
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<CAPACITOR>

C702	1-102-959-00	CERAMIC 22PF 5%	50V
C703	1-104-664-11	ELECT 47 $\mu$ F 20%	25V
C704	1-126-964-11	ELECT 10 $\mu$ F 20%	50V
C705	1-161-754-00	CERAMIC 0.001 $\mu$ F 10%	2KV
C706	1-126-934-11	ELECT 220 $\mu$ F 20%	16V
C707	1-107-504-11	CERAMIC 10PF 0.5PF	500V
C708	1-102-050-00	CERAMIC 0.01 $\mu$ F 99%	500V
C709	1-162-115-00	CERAMIC 330PF 10%	2KV
C712	1-107-662-11	ELECT 22 $\mu$ F 20%	250V

<CONNECTOR>

CN701	1-695-915-11	TAB (CONTACT)
CN702	* 1-564-510-11	PLUG, CONNECTOR 7P
CN703	* 1-564-512-11	PLUG, CONNECTOR 9P
CN704	* 1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
CN705	$\Delta$ 1-251-182-11	SOCKET, CRT

CN706 \* 1-564-512-11 PLUG, CONNECTOR 9P

<DIODE>

D701	8-719-991-33	DIODE 1SS133T-77
D702	8-719-991-33	DIODE 1SS133T-77
D703	8-719-991-33	DIODE 1SS133T-77
D704	8-719-991-33	DIODE 1SS133T-77
D705	8-719-923-86	DIODE MTZJ-T-77-15
D706	8-719-923-86	DIODE MTZJ-T-77-15
D708	8-719-110-17	DIODE RD10ESB2
D709	8-719-109-89	DIODE RD5.6ESB2

REF. NO.	PART NO.	DESCRIPTION	REMARK
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D710 8-719-991-33 DIODE 1SS133T-77

<IC>

IC701 8-759-434-39 IC TDA6106Q

<COIL>

L701 1-410-682-31 INDUCTOR 470 $\mu$ H

<TRANSISTOR>

Q701 8-729-119-76 TRANSISTOR 2SA1175-HFE  
Q702 8-729-119-76 TRANSISTOR 2SA1175-HFE

<RESISTOR>

R701	1-219-743-11	CARBON 100 5%	1/2W
R702	1-215-425-00	METAL 1.5K 1%	1/4W
R703	1-215-437-00	METAL 4.7K 1%	1/4W
R704	1-260-132-11	CARBON 560K 5%	1/2W
R705	1-215-424-00	METAL 1.3K 1%	1/4W
R706	1-215-437-00	METAL 4.7K 1%	1/4W
R707	1-249-435-11	CARBON 33K 5%	1/4W
R708	1-215-428-00	METAL 2K 1%	1/4W
R709	1-260-101-11	CARBON 1.5K 5%	1/2W
R710	1-215-903-11	METAL OXIDE 68K 5%	2W F
R711	1-249-435-11	CARBON 33K 5%	1/4W
R712	1-247-807-31	CARBON 100 5%	1/4W
R713	1-249-437-11	CARBON 47K 5%	1/4W
R714	1-260-099-11	CARBON 1K 5%	1/2W
R715	1-260-133-11	CARBON 680K 5%	1/2W
R717	1-249-417-11	CARBON 1K 5%	1/4W
R718	1-247-807-31	CARBON 100 5%	1/4W
R719	1-260-087-11	CARBON 100 5%	1/2W

<SPARK GAP>

SG701 1-519-422-11 GAP, SPARK  
SG702 1-519-422-11 GAP, SPARK

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\* A-1331-778-A CG BOARD, COMPLETE  
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<CAPACITOR>

C732	1-102-963-00	CERAMIC 33PF 5%	50V
C733	1-161-754-00	CERAMIC 0.001 $\mu$ F 10%	2KV
C735	1-102-050-00	CERAMIC 0.01 $\mu$ F 99%	500V
C736	1-162-115-00	CERAMIC 330PF 10%	2KV
C737	1-107-662-11	ELECT 22 $\mu$ F 20%	250V





The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
<CONNECTOR>			
CN731	1-695-915-11	TAB (CONTACT)	
CN732	* 1-564-510-11	PLUG, CONNECTOR 7P	
CN733	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN734	* 1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P	
CN735 $\Delta$	1-251-182-11	SOCKET, CRT	
CN736	* 1-564-512-11	PLUG, CONNECTOR 9P	
CN737	* 1-564-512-11	PLUG, CONNECTOR 9P	
<DIODE>			
D731	8-719-991-33	DIODE 1SS133T-77	
D732	8-719-991-33	DIODE 1SS133T-77	
D733	8-719-110-17	DIODE RD10ESB2	
<IC>			
IC731	8-759-434-39	IC TDA6106Q	
<COIL>			
L731	1-410-682-31	INDUCTOR	470 $\mu$ H
<RESISTOR>			
R731	1-219-743-11	CARBON	100 5% 1/2W
R732	1-260-132-11	CARBON	560K 5% 1/2W
R733	1-215-421-00	METAL	1K 1% 1/4W
R735	1-249-441-11	CARBON	100K 5% 1/4W
R736	1-215-430-00	METAL	2.4K 1% 1/4W
R737	1-260-101-11	CARBON	1.5K 5% 1/2W
R738	1-215-903-11	METAL OXIDE	68K 5% 2W F
R739	1-260-133-11	CARBON	680K 5% 1/2W
R740	1-260-099-11	CARBON	1K 5% 1/2W
R741	1-215-435-00	METAL	3.9K 1% 1/4W
R742	1-247-885-00	CARBON	180K 5% 1/4W
R743	1-247-807-31	CARBON	100 5% 1/4W
<SPARK GAP>			
SG731	1-519-422-11	GAP, SPARK	
SG732	1-519-422-11	GAP, SPARK	
<CAPACITOR>			
C762	1-102-963-00	CERAMIC	33PF 5% 50V
C763	1-161-754-00	CERAMIC	0.001 $\mu$ F 10% 2KV
C765	1-102-050-00	CERAMIC	0.01 $\mu$ F 99% 500V
C766	1-162-115-00	CERAMIC	330PF 10% 2KV
C767	1-107-662-11	ELECT	22 $\mu$ F 20% 250V

\* A-1331-779-A CB BOARD, COMPLETE  
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REF. NO.	PART NO.	DESCRIPTION	REMARK
<CONNECTOR>			
CN761	1-695-915-11	TAB (CONTACT)	
CN762	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN763	* 1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P	
CN764 $\Delta$	1-251-182-11	SOCKET, CRT	
CN765	* 1-564-512-11	PLUG, CONNECTOR 9P	
CN766	1-564-513-11	PLUG, CONNECTOR 10P	
<DIODE>			
D761	8-719-991-33	DIODE 1SS133T-77	
D762	8-719-923-86	DIODE MTZJ-T-77-15	
D763	8-719-110-17	DIODE RD10ESB2	
D764	8-719-923-86	DIODE MTZJ-T-77-15	
<IC>			
IC761	8-759-434-39	IC TDA6106Q	
<COIL>			
L761	1-410-682-31	INDUCTOR	470 $\mu$ H
<RESISTOR>			
R761	1-219-743-11	CARBON	100 5% 1/2W
R762	1-260-132-11	CARBON	560K 5% 1/2W
R763	1-215-420-00	METAL	910 1% 1/4W
R764	1-249-426-11	CARBON	5.6K 5% 1/4W
R765	1-215-430-00	METAL	2.4K 1% 1/4W
R766	1-260-101-11	CARBON	1.5K 5% 1/2W
R767	1-215-903-11	METAL OXIDE	68K 5% 2W F
R768	1-260-133-11	CARBON	680K 5% 1/2W
R769	1-260-099-11	CARBON	1K 5% 1/2W
R770	1-247-807-31	CARBON	100 5% 1/4W
R771	1-260-087-11	CARBON	100 5% 1/2W
<SPARK GAP>			
SG761	1-519-422-11	GAP, SPARK	
SG762	1-519-422-11	GAP, SPARK	
<CAPACITOR>			
C1301	1-130-495-00	FILM	0.1 $\mu$ F 5% 50V
C1302	1-126-959-11	ELECT	0.47 $\mu$ F 20% 50V
C1304	1-126-964-11	ELECT	10 $\mu$ F 20% 50V
C1305	1-130-495-00	FILM	0.1 $\mu$ F 5% 50V
C1306	1-126-964-11	ELECT	10 $\mu$ F 20% 50V

\* A-1372-441-A HA BOARD, COMPLETE  
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\* A-1372-474-A HA MOUNT (VAR)



REF. NO.	PART NO.	DESCRIPTION	REMARK			REF. NO.	PART NO.	DESCRIPTION	REMARK		
C1307	1-126-964-11	ELECT	10μF	20%	50V		* A-1390-826-A	Z BOARD, COMPLETE *****			
		<CONNECTOR>					4-382-854-11	SCREW (M3X10), P, SW (+)			
CN1301	1-564-523-11	PLUG, CONNECTOR 8P						<CAPACITOR>			
CN1302 *	1-564-526-11	PLUG, CONNECTOR 11P									
CN1304 *	1-564-518-11	PLUG, CONNECTOR 3P									
		<DIODE>									
D1301	8-719-110-17	DIODE RD10ESB2					C1433	1-106-343-00	MYLAR	0.001μF	10% 200V
D1302	8-719-110-17	DIODE RD10ESB2					C1434	1-106-383-00	MYLAR	0.047μF	10% 200V
D1303	8-719-110-17	DIODE RD10ESB2					C1435	1-107-667-11	ELECT	2.2μF	20% 160V
D1304	8-719-053-43	DIODE SLR-325VCT31					C1436	1-137-364-11	FILM	0.001μF	5% 50V
D1305	8-719-053-43	DIODE SLR-325VCT31					C1437	1-137-364-11	FILM	0.001μF	5% 50V
D1306	8-719-110-17	DIODE RD10ESB2					C1438	1-106-383-00	MYLAR	0.047μF	10% 200V
D1307	8-719-110-17	DIODE RD10ESB2					C1439	1-161-830-00	CERAMIC	0.0047μF	500V
D1308	8-719-110-17	DIODE RD10ESB2					C1440	1-126-933-11	ELECT	100μF	20% 16V
D1309	8-719-109-89	DIODE RD5.6ESB2					C1441	1-102-074-00	CERAMIC	0.001μF	10% 50V
							C1443	1-126-935-11	ELECT	470μF	20% 16V
		<IC>									
IC1301	8-742-088-10	HYB IC SBX1780-51(10)						<CONNECTOR>			
		<JACK>									
J1301	1-770-361-11	TERMINAL BLOCK, S									
		<RESISTOR>									
R1301	1-249-425-11	CARBON	4.7K	5%	1/4W		CN1401 *	1-564-506-11	PLUG, CONNECTOR 3P		
R1302	1-249-416-11	CARBON	820	5%	1/4W		CN1402	1-564-505-11	PLUG, CONNECTOR 2P		
R1303	1-249-417-11	CARBON	1K	5%	1/4W		CN1403 *	1-564-506-11	PLUG, CONNECTOR 3P		
R1304	1-249-425-11	CARBON	4.7K	5%	1/4W		CN1404 *	1-564-507-11	PLUG, CONNECTOR 4P		
R1305	1-247-815-91	CARBON	220	5%	1/4W		CN1406 *	1-564-507-11	PLUG, CONNECTOR 4P		
R1306	1-247-815-91	CARBON	220	5%	1/4W		CN1431 *	1-564-508-11	PLUG, CONNECTOR 5P		
R1307	1-249-420-11	CARBON	1.8K	5%	1/4W		CN1433 *	1-564-507-11	PLUG, CONNECTOR 4P		
R1308	1-247-895-91	CARBON	470K	5%	1/4W		CN1434 *	1-580-689-11	PIN, CONNECTOR (PC BOARD) 4P		
R1309	1-247-895-91	CARBON	470K	5%	1/4W		CN1461 *	1-564-506-11	PLUG, CONNECTOR 3P		
R1310	1-249-429-11	CARBON	10K	5%	1/4W		CN1462 *	1-564-507-11	PLUG, CONNECTOR 4P		
R1311	1-247-804-11	CARBON	75	5%	1/4W		CN1463	1-564-505-11	PLUG, CONNECTOR 2P		
R1312	1-247-804-11	CARBON	75	5%	1/4W		CN1464 *	1-564-507-11	PLUG, CONNECTOR 4P		
R1314	1-247-807-31	CARBON	100	5%	1/4W						
R1315	1-247-804-11	CARBON	75	5%	1/4W						
		<SWITCH>									
S1301	1-572-198-11	SWITCH, KEYBOARD						<COIL>			
S1302	1-572-198-11	SWITCH, KEYBOARD									
S1303	1-572-198-11	SWITCH, KEYBOARD					L1431	1-410-478-11	INDUCTOR	47μH	
S1304	1-572-198-11	SWITCH, KEYBOARD					L1432	1-410-478-11	INDUCTOR	47μH	
S1305	1-572-198-11	SWITCH, KEYBOARD									
								<TRANSISTOR>			
S1306	1-572-198-11	SWITCH, KEYBOARD									
S1307	1-572-198-11	SWITCH, KEYBOARD					Q1431	8-729-017-06	TRANSISTOR 2SC4793		
							Q1432	8-729-017-05	TRANSISTOR 2SA1837		
							Q1433	8-729-119-76	TRANSISTOR 2SA1175-HFE		
							Q1434	8-729-119-78	TRANSISTOR 2SC2785-HFE		
							Q1435	8-729-119-78	TRANSISTOR 2SC2785-HFE		
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The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
Q1436	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<RESISTOR>	
R1401	1-249-414-11	CARBON 560	5% 1/4W
R1402	1-249-414-11	CARBON 560	5% 1/4W
R1415	1-216-475-11	METAL OXIDE 120	5% 3W F
R1418	1-216-475-11	METAL OXIDE 120	5% 3W F
R1431	1-249-414-11	CARBON 560	5% 1/4W
R1432	1-249-414-11	CARBON 560	5% 1/4W
R1435	1-216-475-11	METAL OXIDE 120	5% 3W F
R1436	1-216-475-11	METAL OXIDE 120	5% 3W F
R1437	1-249-414-11	CARBON 560	5% 1/4W
R1438	1-249-432-11	CARBON 18K	5% 1/4W
R1439	1-249-432-11	CARBON 18K	5% 1/4W
R1440	1-249-414-11	CARBON 560	5% 1/4W F
R1441	1-249-417-11	CARBON 1K	5% 1/4W
R1442	1-249-408-11	CARBON 180	5% 1/4W
R1443	1-249-377-11	CARBON 0.47	5% 1/4W F
R1445	1-249-403-11	CARBON 68	5% 1/4W
R1448	1-249-416-11	CARBON 820	5% 1/4W
R1449	1-249-403-11	CARBON 68	5% 1/4W
R1450	1-249-417-11	CARBON 1K	5% 1/4W
R1451	1-249-411-11	CARBON 330	5% 1/4W
R1452	1-249-417-11	CARBON 1K	5% 1/4W
R1453	1-249-401-11	CARBON 47	5% 1/4W
R1454	1-260-311-11	CARBON 39	5% 1/2W
R1455	1-249-384-11	CARBON 1.8	5% 1/4W F
R1456	1-215-916-00	METAL OXIDE 680	5% 3W F
R1457	1-249-417-11	CARBON 1K	5% 1/4W F
R1458	1-249-384-11	CARBON 1.8	5% 1/4W F
R1459	1-249-400-11	CARBON 39	5% 1/4W F
R1460	1-215-916-00	METAL OXIDE 680	5% 3W F
R1461	1-249-414-11	CARBON 560	5% 1/4W
R1462	1-249-414-11	CARBON 560	5% 1/4W
R1464	1-249-417-11	CARBON 1K	5% 1/4W
R1465	1-216-475-11	METAL OXIDE 120	5% 3W F
R1466	1-216-475-11	METAL OXIDE 120	5% 3W F

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MISCELLANEOUS

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$\Delta$ 1-223-925-11	RESISTOR ASSY (HIGH-VOLTAGE)
$\Delta$ 1-451-454-11	DEFLECTION YOKE (G)
$\Delta$ 1-451-455-31	DEFLECTION YOKE (R) (B)
$\Delta$ 1-452-790-21	NECK ASSY
1-452-909-11	MAGNET ASSY, 4 POLE

REF. NO.	PART NO.	DESCRIPTION	REMARK
	1-505-378-11	SPEAKER (10CM)	
	1-556-945-21	CABLE, P-P	
*	1-557-056-31	CABLE, P-P	
$\Delta$	1-769-837-11	CORD, POWER (WITH NOISE FILTER)	
	8-598-414-00	ANTENNA SWITCH AS-2F	
$\Delta$	8-733-528-05	PICTURE TUBE 07MAC3 (B)	
		(GROUND SPRING)	
$\Delta$	8-733-537-05	PICTURE TUBE 07MXC2 (G)	
$\Delta$	8-733-553-05	PICTURE TUBE 07MXC3 (R)	

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ACCESSORIES AND PACKING MATERIALS

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- 3-862-541-41 MANUAL, INSTRUCTION
- \* 4-037-674-01 BOARD, TOP
- \* 4-041-423-01 SHEET, PROTECTION
- \* 4-041-425-01 BAG, PROTECTION
- \* 4-057-651-02 CUSHION (UPPER) (ASSY)
- \* 4-057-652-01 CUSHION (LOWER) (ASSY)
- \* 4-057-657-01 INDIVIDUAL CARTON
- \* 4-057-658-01 TRAY
- \* 4-057-659-01 BOARD, BOTTOM

REMOTE COMMANDER

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- 1-473-749-31 REMOTE COMMANDER (RM-Y136A)
- 4-978-977-01 POCKET, COVER (FOR RM-Y136A)